COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF AGRICULTURE.

BULLETIN NO. 101.

TABULATED ANALYSES

OF

COMMERCIAL FERTILIZERS

FROM

SAMPLES SELECTED IN ACCORDANCE WITH ACT OF MARCH 25, 1901,

BY THE

Pennsylvania Department of Agriculture.

FROM JANUARY 1st, 1902, TO AUGUST 1st, 1902.

WM. STANLEY RAY,
STATE PRINTER OF PENNSYLVANIA.
1902.

DEPARTMENT OF AGRICULTURE.
COMMONWEALTH OF PENNSYLVANIA.

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AN ACT

To regulate the manufacture and sale of commercial fertilizers.

Section 1. Be it enacted, &c., That every package of commercial fertilizer sold, offered, or exposed for sale, for manurial purposes, within this Commonwealth, shall have plainly stamped thereon the name of the manufacturer, the place of manufacture, the net weight of its contents, and an analysis stating the percentage therein contained of nitrogen in an available form, of potash soluble in water, of soluble and reverted phosphoric acid and of insoluble phosphoric acid: Provided, That any commercial fertilizer sold, offered, or exposed for sale, which shall contain none of the above named constituents shall be exempt from the provisions of this act.

Section 2. That every manufacturer or importer of commercial fertilizers as specified in section one of this act shall, on or before the first day of January next ensuing, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture an affidavit showing the amount of said fertilizer sold within the Commonwealth during the last preceding year; and if the said amount shall be one hundred tons or less, he shall pay to the Treasurer of the State the sum of fifteen dollars for each and every brand of such commercial fertilizer sold within the State during the last preceding year; and if the said amount shall exceed one hundred tons, and be less than five hundred tons, he or they shall pay the sum of twenty dollars, as aforesaid; and if the said amount shall be five hundred tons or more, he or they shall pay the sum of thirty dollars, as aforesaid. If such manufacturer or manufacturers, importer or importers, shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of fifteen dollars, as aforesaid. Every said manufacturer shall, at the same time, file with the Secretary of Agriculture a copy of the analysis required by section one of this act, and shall then be entitled to receive from the Secretary of Agriculture a certificate showing that the provisions of this act have been complied with.

Section 3. The Secretary of Agriculture is hereby empowered to collect samples of commercial fertilizers, either in person or by his duly qualified agent or representatives, and to have them analyzed, and to publish the results for the information of the public.

Section 4. The Secretary of Agriculture, and such assistants, agents, experts, chemists, detectives and counsel as he shall duly authorize for the purpose, shall have full access, ingress and egress to

all places of business, factories, farms, buildings, carriages, cars and vessels, used in the manufacture, transportation or sale of any commercial fertilizer. They shall also have power to open any package or vessel containing or supposed to contain any commercial fertilizer, and to take therefrom samples for analysis upon tendering the value of said samples.

Section 5. Any person selling, offering, or exposing for sale, any commercial fertilizer without the analysis required by section one of this act, or with an analysis stating that it contains a larger percentage of any one or more of the above named constituents than is contained therein, or for the sale of which all the provisions of section two have not been complied with, shall be guilty of misdemeanor, and on conviction shall forfeit a sum not less than twenty-five and not exceeding one hundred dollars for the first offense, and not less than two hundred dollars for each subsequent offense. It shall be the duty of the Secretary of Agriculture to enforce the provisions of this act, and all penalties, costs and fines recovered shall be paid to him or his duly authorized agent, and by him be immediately paid into the State Treasury, to constitute a special fund to be used in accordance with the provisions of section six of this act.

Section 6. The money paid into the Treasury under the provisions of this act shall constitute a special fund, from which the cost of selecting samples, making analyses, and other expenses incident to the carrying into effect the provisions of this act, shall be paid: Provided, That the total amount thus expended shall in no case exceed the amount paid into the Treasury.

Section 7. The term "commercial fertilizers," as used in this act, shall be taken to mean any and every substance imported, manufactured, prepared or sold for fertilizing or manuring purposes, except barnyard manure, marl, lime, and wood ashes, and not exempt by the provisions of section one of this act.

Section 8. This act shall go into effect on and after the thirty-first day of December, one thousand nine hundred and one. All acts or parts of acts inconsistent with this act are hereby repealed, except that existing laws are to continue in force until this act goes into effect.

Approved—The 25th day of March, A. D. 1901.

PREFACE.

Harrisburg, Pa., August 1, 1902.

The following Bulletin, No. 101, containing analyses of samples of Commercial Fertilizers, collected by the agents of the Department of Agriculture from January 1, to August 1, 1902, is herewith presented, for the information of the public.

The usual discussion by the Chemist, of changes in the prices of the ingredients of fertilizers, which have occurred since August 1, 1901, is appended, together with a schedule of prices fixed for the current year.

The foot notes refer to the page where the appropriate list of prices may be found; and farmers are urged to use these data, and compute for themselves, the value of the composition which they expect to purchase.

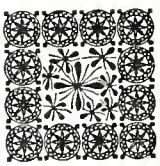
The attention of manufacturers and dealers in Commercial Fertilizers, is called to the new law, which is printed for information in this bulletin. The law changes the license fee from ten dollars to fifteen dollars for sales of one hundred tons or less, of each and every brand sold within the State the previous year. The powers of the Secretary of Agriculture, in the matter of enforcing the law, have been enlarged.

Manufacturers in sending in their list of brands of fertilizers sometimes use a slightly different wording on their sacks from that furnished this Department. Agents of the Department in reporting are required to copy the precise words used on the sack. If any change has been made in branding, from the designation sent to this office, we regard the brand so changed as UNLICENSED, and a separate license must be taken out.

Manufacturers are, therefore, cautioned to use the exact language in marking the sacks, that they have furnished to the Department for record.

Commercial fertilizers are now a recognized necessity in the agriculture of Pennsylvania, and our farmers will have to post themselves as to the action of the various substances that compose them, or pay the penalty which is always exacted from ignorance. There was a time when the farmer could not know what to purchase, or how to purchase. That time is past, and if he is deceived now, it is his own fault. Full information is at his disposal if he will take and use it.

JOHN HAMILTON,
Secretary of Agriculture.



LETTER OF TRANSMITTAL.

The Pennsylvania State College Agricultural Experiment Station,
State College, Pa., August 1, 1902.

Hon. John Hamilton, Secretary of Agriculture, Harrisburg, Pa.:

Sir: I have the honor to transmit herewith a tabulated statement of the analyses of the fertilizer samples, submitted by the agents of the Department for the period from January 1st to August 1st, 1902. A parallel statement of the guaranties, filed by the manufacturers, accompanies the report. There is prefixed a review of the wholesale markets in fertilizer ingredients during the principal purchasing season affecting this year's trade, and an exposition of the principles adopted in estimating the comparative commercial value of the several brands analyzed.

Very respectfully,

WM. FREAR.

FERTILIZER VALUATIONS—1902.

The object of an official valuation of commercial fertilizers is to enable the consumer to judge approximately whether he has been asked to pay for a given brand more than the fertilizing ingredients it contains and market conditions prevailing at the time would warrant. It is clear, therefore, that no attempt is made in this valuation to indicate whether the fertilizer valued possesses a greater or less crop-producing capacity than another fertilizer; but only whether it is higher priced than another of the same general composition.

For this purpose it must be so computed as to include all the elements entering into the cost of a fertilizer as it is delivered to the consumer. These elements may be conveniently grouped as follows:

1. The wholesale cost of the ingredients.

2. The jobbers' gross profit on the sale of the ingredients; this includes office expenses, advertising, losses, etc.; for the purpose of the present computation it may be assumed that the sum of this gross profit and the wholesale cost of the ingredients, is equivalent to the retail price of the single ingredients near the wholesale markets in ton lots of original packages for cash.

3. The expense and profit of mixing: This item applies only to complete fertilizers, rock and potash, and ammoniated rock; not to dissolved or ground bone, or to dissolved rock.

4. The expense and profit of bagging.

5. Agents' commission: This item includes not only the commission proper, but every advance in price due to the sale of the goods through an agent in small quantities on time, rather than directly to the consumer in ton lots for cash.

6. Freight from the wholesale market to the point of delivery.

The valuations for 1901 were based:

1. Upon the wholesale prices from September 1, 1900, to March 1, 1901, of the raw materials used in fertilizer manufacture, the quotations of the New York market being adopted for all materials except acidulated phosphate rock and ground bone.

2. Upon an allowance of 20 per cent. of the wholesale prices, above mentioned, to cover jobbers' profits.

By adding the 20 per cent. allowed for jobbers' gross profit to the wholesale price of the several raw materials, the retail price in original packages at the jobbers' warehouse is obtained.

Since the amount of the several valuable fertilizing constituents in the various raw materials is known, it is a simple matter to determine the corresponding retail value per pound of the valuable fertilizing constituents yielded by each raw material. A schedule of these pound values affords a convenient basis of computation of the value per ton of various fertilizers, whose composition is ascertained by analysis.

The values assigned, for the present, to the other elements in the cost of the fertilizer at the point of delivery are:

3. For mixing, $1.00 per ton.

4. For bagging, $1.00 per ton, in all cases except those in which the article was sold in original package; the cost of the package being, in such cases, included in the wholesale price.

5. For agents' commissions, 20 per cent. of the cost of the goods f. o. b. at the jobbers' or mixers' warehouse.

6. For freight, $2.00 per ton; the cost of the freight in lots of twelve tons or over, from the seaboard to Harrisburg, averaging $1.88 per ton.

The following valuation of dissolved South Carolina rock illustrates the method:

Phosphoric acid.	Per cent.	Weight per ton.	
Soluble,	11.50	230 lbs. at 3c.	$6 90
Reverted,	2.50	50 lbs. at 2½c.	1 25
Insoluble,	1.00	20 lbs. at 1½c.	30
Retail cash value of ingredients,			$8 45
Bagging,			1 00
Cash value of goods ready for shipment,			$9 45
Agents' commission, 20 per cent.,			1 89
Freight,			2 00
Commercial value per ton,			$13 34

It is not to be expected, of course, that the valuations thus computed will precisely represent the fair price to be charged for a brand in each locality and in every transaction. Market conditions, competition, distance from factory, all introduce minor variations. Nevertheless, to make the approximation reasonably close, the average valuation of a given class of goods ought to agree closely with its ascertained average selling price. Whenever such an agreement is no longer obtained by the use of a schedule, it is evident that the schedule of retail values of the constituents, or the added allowances for mixing, etc., requires revision.

It is needful to note here another factor greatly affecting the practical accuracy of these approximations. Their computation would offer little difficulty and their usefulness be far greater, if, by the ordinary methods of analysis, the exact nature of the ingredients used to supply the several fertilizer constituents, were capable of certain determination. This is, however, possible, to-day, to only a limited extent. The valuations are, therefore, based on the assumption that the fertilizers are uniformly compounded from high quality ingredients, such as are commonly employed in the manufacture of fertilizers of the several classes. Consumers should carefully avoid the error of accepting such valuations as infallible; they are not designed to be used for close comparison of single brands, but only to indicate whether the price asked for a fertilizer is abnormal, assuming good quality for the ingredients used. From this it is clear that, except as high freights may require, the selling price of a brand should not far exceed the valuation; but that a fertilizer may be made of inferior materials and yet have a high valuation.

The valuations used during 1900 were modified for use during 1901 in accordance with the changes in wholesale prices of fertilizing ingredients and to make the valuations more closely follow the selling price.

The following comparative statement shows the valuations and selling prices of the several classes of fertilizers during 1900 and 1901.

Fertilizers.	Number of samples.	Valuation.	Selling price.	Difference of valuation from selling price.
Spring, 1900.				
Complete,	276	24.61	25.38	—0.77
Rock-and-potash,	48	14.71	17.25	—2.64
Dissolved bone,	2	30.87	26.00	4.87
Ground bone,	30	25.91	28.42	—2.51
Dissolved rock,	56	13.48	13.57	—0.09
Fall, 1900.				
Complete,	130	24.00	23.22	0.81
Rock-and-potash,	33	14.63	18.11	—3.48
Dissolved bone,	2	22.74	23.50	—0.76
Ground bone,	17	26.87	28.73	—1.86
Dissolved rock,	31	13.11	13.96	—0.85
Spring, 1901.				
Complete,	291	24.76	23.92	0.84
Rock-and-potash,	60	14.60	16.20	—1.60
Dissolved bone,	1	29.00	28.00	1.00
Ground bone,	44	28.71	27.59	1.12
Dissolved rock,	49	13.51	13.90	—0.39
Fall, 1901.				
Complete,	179	23.75	22.28	1.47
Rock-and-potash,	42	14.23	16.09	—1.86
Dissolved bone,	5	23.36	23.91	—0.55
Ground bone,	33	27.69	25.94	1.75
Dissolved rock,	49	13.82	13.18	0.64

The valuations during 1901 for the more important classes of fertilizers were considerably higher than the selling prices; the difference was more marked in the fall than in the spring. As usual, the selling prices of rock-and-potash maintain a disproportionately high level.

The general tendencies of the wholesale market may be judged from the following comparative statement, obtained from the weekly reports of the Oil, Paint and Drug Reporter, of New York City, showing the average wholesale prices of fertilizer raw materials from September 1, 1900, to March 1, 1901, and from September 1, 1901, to March 1, 1902.

Wholesale Prices of Fertilizer Ingredients, New York: Oil, Paint and Drug Reporter.

Substance.	Amount priced.	Average price Sept., 1900, to March, 1901.	Average price Sept. 1, 1901, to March, 1902.	Prices Sept.-Feb., 1901-2, in per cent. of prices 1900-01.
Sulfate of ammonia,	Cwt.,	2.8005	2,8324	101.1
Nitrate of soda,	Cwt.,	1.8153	1,9889	109.5
Dried blood, H. G.,	Unit (20 lbs.),	2.3127	2.2375	96.7
Concentrated tankage,	Ton,	16.227	16.25	100.1
Rough bone,	Ton,	20.983	18.25	86.9
Ground bone,	Ton,	21.842	20.50	93.8
Bone meal,	Ton,	19.70	17.72	89.9
Fish guano (dry),	Ton,	23.00	24.50	106.5
Fish guano (acid),	Ton,	12.00	13.25	110.4
Refuse bone-black,	Ton,	19.30	19.00	98.4
Phosphate rock (Charleston),	Ton,	7.25	7.48	103.2
Phosphate rock (Tennessee),	Ton,	3.25	3.328	102.4
Acid phosphate,	Unit (20 lbs.),	.6422	.625	97.3
Double manure salts,	Cwt.,	1.0725	1.13	105.4
Sulfate of potash,	Cwt.,	2.07	2.125	102.6
Kainit,	Ton,	9.30	9.05	97.3
Muriate of potash,	Cwt.,	1.8475	1.8475	100.0
Sulfuric acid, 66 —° B.,	Cwt.,	1.475	1.573	106.6

In ammoniates, such as dried blood or concentrated tankage, the unit is of ammonia, of which 82.35 per cent. is nitrogen; in acid phosphates, the unit is of phosphoric acid (phosphorus pentoxid).

The nitrogenous materials and animal sources of phosphoric acid show the following changes from last year's prices. Sulfate of ammonia has advanced slightly, while in the case of nitrate of soda and fish guano there has been a distinct advance over last year's figures. Concentrated tankage remains practically the same. Dried blood and refuse bone-black have fallen off slightly; rough bone and bone meal show a marked decrease. The following data are from the monthly reports of Thos. J. White & Co., fertilizer brokers, Baltimore, Md., giving wholesale quotations upon ammoniates.

Wholesale Prices of Ammoniates: Reports of Thos. J. White & Co., Baltimore, Md.

	Prices Sept. to March, 1900-1901.	Prices Sept. to March, 1901-1902.
Sulfate of ammonia, per cwt.		
Foreign, f. o. b. Baltimore,	2.76	2.79
Domestic, f. o. b. Boston,	2.76	†2.75
Ground blood, f. o. b. Chicago, per unit ammonia,	2.12	2.015
Concentrated tankage, f. o. b. Chicago, per unit ammonia,	1.96	1.875
Crushed tankage, f. o. b. Chicago, per ton :		
10 per cent. ammonia, 15 per cent. bone phosphate,	*22.63	20.67
10 per cent. ammonia, 10 per cent. bone phosphate,	*20.375	19.49
Crushed tankage, c. a. f. Baltimore, per unit ammonia,	2.29	2.26
Dried fish, f. o. b. factory, per unit ammonia,	‡2.14	§2.175

†f. o. b. Everett; quotations for September only.
*Lacking December quotations.
‡Lacking December and February quotations.
§Quotations for September only.

The foregoing table indicates the following variations from prices a year ago. Sulfate of ammonia has increased 1 per cent. and the other ammoniates have decreased as follows: Ground blood, 5 per cent.; cencentrated tankage, 4 per cent.; crushed tankage, 10½ and 15, and 10 and 10, 8½ per cent., and crushed tankage sold per unit of ammonia 1 per cent.

The Engineering and Mining Journal of New York City, gives quotations of sulfate of ammonia and nitrate of soda for January, 1902, 2.8375 and 1.97 per cwt., respectively, as compared with 2.76 and 1.85 for the same month last year. All these figures are confirmatory of those already quoted showing a slight advance in the wholesale price of ammonium sulfate, a marked advance in the case of nitrate of soda, a shrinkage in the value of blood and tankage and quite a marked decrease in the case of bone.

Of the animal raw materials furnishing phosphoric acid, refuse bone-black only has fallen off somewhat in price. The following summary from the Engineering and Mining Journal shows the prices of rock phosphate. Lower freight rates helped to increase the export trade about 17 per cent., 750,000 tons being shipped as against 619,996 tons in 1900.

Florida Phosphate: The largest business was done in high grade rock, the exports amounting to 428,000 tons or about 80,000 tons more than last year. The chief demand for pebble phosphate was for home consumption, the exports however, being larger than last year. Prices during the year were: for high grade rock (77-80) per cent.) f. o. b. Fernandina, $7.25 in January, $6.75 from February to

November inclusive, and $7.25 in December, making the average for the year $6.83 per ton, this being below the price for 1900. During January and February of this year, the price rose, being quoted during that time at $7.50. Land pebbles (68-73 per cent.) were $4.14 in January, $3.93 from February to September inclusive, $3.75 in October and $3.13 in November and December, making the yearly average $3.80. During January and February of this year prices were $3.00 to $3.25.

Peace River phosphate was less active, 18,790 tons being exported as compared with 21,427 tons last year. The average prices f. o. b. Fernandina, were $2.94 in January, $2.63 from February to October, and $2.38 in November and December, the average for the year being $2.61. During January and February of this year quotations were $2.25 to $2.50.

Tennessee Phosphates: The export trade is growing over 130,000 tons of high grade rock being sent abroad. As a result of competition, prices were lower than in 1900. The f. o. b. prices of export rock were $2.88 in January, $3.25 in February, $3.38 in March to July inclusive, $3.68 in August and September, $3.30 in October, $3.31 in November and $3.50 in December; yearly average $3.33, and for January and February of this year, $3.50.

Prices on domestic orders for high grade rock (78 per cent.) averaged $2.78 in January and $3.13 in December, or $2.97 per long ton for the year, f. o. b. Mt. Pleasant. During January and February of this year prices were $3.00 to $3.25.

Domestic rock (75 per cent. bone phosphate) averaged $2.63 in January, and $2.88 in December, or $2.75 for the year; and for the 70.72 per cent. grade, $2.13 in May to July, $2.29 in September and $2.25 in December, or $2.21 for the year. The prices for January and February of this year upon these grades were $2.75 to $3.00 and $2.25 to $2.50 respectively; all f. o. b. Mt. Pleasant.

In South Carolina production was curtailed owing to heavy stocks in the early part of the year and small demand. Coastwise shipments and exports decreased over last year. The average prices f. o. b. Ashley river, for dried rock were $4.50 in January and February, $3.25 in March to July, making $3.65 for the year. Of the crude rock, comparatively little has been sold out of the State, the average price for the year being $3.36. During January and February of this year land rock was quoted at $3.25 and river rock at $2.75 to $3.25.

The mine prices for 1901, at all the principal points of production, were materially lower than during 1900, to a degree which is not fully reflected by the New York quotations.

Raw Materials of Acid Manufacture.

Brimstone: High prices and increased consumption of pyrites by acid-makers have reduced the imports of brimstone about 7,000 tons. The total imports into the United States for 1901, as given by the Engineering and Mining Journal, were about 160,000 tons, chiefly in best unmixed seconds; and these were consumed largely by paper mills. Prices were maintained by the trust in Sicily nearly all through the year and would have continued to rise had not the Anglo-Sicilian Co. been compelled to make concessions. As compared with those of 1900, New York prices show an increase of 77 cents a ton for spot and 82 cents for shipments. Best unmixed thirds sold in New York at $2 to $3 below best unmixed seconds. The average New York price for 1901 for best unmixed "seconds" "spot" was $22.95.

Pyrites: The demand has been good and deliveries on contract large at good prices. Domestic production has increased and imports during the year 1901 were 17 per cent. above those for 1900. The U. S. Bureau of Statistics shows imports for the year ending June 30, 1901, of 339,217 tons, valued at $1,166,686, or $3.44 per ton. For the year ending June 30, 1900, the imports were 334,131 tons, at $3.61, in both cases most of the imports being from Spain.

The Engineering and Mining Journal estimates the imports into this country for 1901 as 389,000 tons, chiefly from Spain. Low freight rates favored these large imports. The same journal summarizes prices as follows: Spanish pyrites (Huelva, 46-51 per cent. sulfur) were sold at 12 to 14 cents per unit ($5.52 to $7.14 per ton) ex ship Atlantic ports. Domestic pyrites, 42-44 per cent. sulfur, f. o. b. Mineral City, Va., $4.90 per ton for "lump" ore and 10 cents per unit ($4.70 per ton) for fines." Massachusetts, f. o. b. Charlemont, $5.00 to $5.50 for "lump" and $4.75 to $500 for "fines." The raw materials for acid manufacture were, therefore, only a little higher than during the preceding year, though the fall of 1901 witnessed an increase.

Concerning sulfuric acid, the same authority states that the General Chemical Co. has kept prices at a satisfactory level. As the year advanced, prices were raised to meet the higher cost of raw material. In New York, prices were for 66 per cent. acid, $1.10—$1.30 per 100 lbs.; for 60 per cent. acid, 90 cents to $1.10 per 100 lbs., and for 50 per cent. acid in bulk $12.00 to $16.00 per ton.

During the fall of 1901, therefore, rock prices were considerably lower, acid prices slightly higher than in 1900. Valuation schedules must be based, however, upon the actual wholesale prices of the acid phosphates, rather than upon those of the raw materials from

which they are made. New York wholesale quotations for acid phosphate, per unit of available phosphoric acid, were, according to the Oil, Paint and Drug Reporter, during 1900-1, 64.2 cts.; during 1901-2, 62.5 cts. According to the Engineering and Mining Journal, acid phosphate was offered, early this year, for 57.5 to 60.0 cents per unit; the retail selling prices in this State decreased from the spring to the fall of last year nearly 7 cents per unit.

Potash Salts: The reports of the U. S. Bureau of Statistics show the following entries for consumption during the fiscal years 1900 and 1901:

	1900	1901.
Muriate (pounds),	113,032,418	138,561,091
Kieserit, kainit, etc. (tons),	133,244	187,470

The German Potash Syndicate regulates the prices on potash salts and has held the 1902 schedule at the same level as that of 1901.

On the basis of large lots sold through brokers for cash and delivered at Boston, New York or Philadelphia, the schedules announced by the Syndicate are as follows.

Salt.	After March 1, 1900.	February, 1901.	After March 1, 1901.
Muriate:			
(80 to 85 per cent., 80 per cent. basis), cwt.,	$1 80	$1 80	$1 83
(95 per cent., 80 per cent. basis), cwt.,	.....	1 83	1 86
Sulfate:			
(90 per cent., 90 per cent. basis), cwt.,	2.25	2 08	2 11
(96 per cent., 90 per cent. basis), cwt.,	.....	2 11	2 14
Double manure salt (48 to 50 per cent., 48 per cent. basis), cwt.,	1 04	1 09	1 12
Kainit (12.4 per cent. actual potash) per ton at port of shipment,	8 80	8 80	.....
Sylvinite (per unit potassium sulfate),	.....	38-39	.....
Manure salt (20 per cent. potash), per unit potash,	.....	62-64	.....

This trade is so managed that, before March 1, nearly all wholesale deliveries of the year are contracted for.

Composition of Raw Materials.

In order to form a correct idea of the cost per pound of the fertilizing constituents of these materials, it is needful to determine their composition; or, in other words, the quantities of valuable constituents each contains. The following table shows the composi-

tion of the raw materials used in the manufacture of fertilizers. Very few analyses for these materials, with the exception of ground bone and dissolved rock, have been made in Pennsylvania. The figures in the following table include the averages of the results of analyses made in Connecticut, Massachusetts, New Jersey and Pennsylvania during the past year, except in the case of ground bone and dissolved rock phosphates, where Pennsylvania results alone are included.

Composition of Non-Acidulated Fertilizer Ingredients (Per Cent).

	Number of samples analyzed.	Nitrogen.	Potash.	Total phosphoric acid.
Sulfate of ammonia,	1	19.81	.....	.....
Nitrate of soda,	19	15.68	.....	.....
Dried blood,	6	11.43	.....	.....
Ground bone,	77	3.11	.....	22.74
Tankage,	11	5.54	.....	16.47
Ground fish,	15	7.61	.....	6.40
Cotton seed meal,	46	7.24	1.90	3.15
Castor pomace,	5	5.01	.92	2.08
Sulfate of potash, high grade.	8	.....	49.83	.....
Muriate of potash,	30	.....	50.43	.....
Kainit,	4	.....	13.44	.....
Double sulfate of potash and magnesia,	8	.....	26.47	.....

Composition of Acidulated Fertilizer Ingredients (Per Cent).

	Number of samples analyzed.	Total phosphoric acid.	Soluble phosphoric acid.	Reverted phosphoric acid.	Insoluble phosphoric acid.
Dissolved bone-black,	5	16.75	12.53	2.81	1.41
Dissolved bone,*	6	17.55	2.03	6.70	8.82
Dissolved rock phosphate,	98	16.05	9.86	4.71	1.48

*Also contains 2.40 per cent. nitrogen.

The above figures, considering only those cases where a considerable number of analyses are available, would indicate that there has been no great change in the composition of the raw materials used in fertilizer manufacture.

Cost per Pound of Fertilizer Constituents.

From the foregoing data showing the cost per ton, hundredweight, or other unit of measure, of the several raw materials, and

the quantities of valuable constituents the average materials now on the market contain, the wholesale cost per pound of the valuable constituents can be readily estimated. In the case of ammoniates, the quotations are "per unit of ammonia" in many cases. The term "unit" is equivalent to "per cent.;" in goods sold by the ton of 2,000 lbs., the unit is equal to 20 lbs.; and 20 lbs. of ammonia contain 16.47 lbs. of nitrogen.

In the case of refuse bone-black, unacidulated, the mean, 28.25 per cent. of phosphoric acid, is assumed to represent the average material on the market.

Phosphate rock is sold by the ton of 2,240 lbs.; this material is sold on the basis of the bone-phosphate of lime it contains, with drawbacks for injurious constituents. Since the bone phosphate of lime contains 45.8 per cent. of phosphoric acid, each per cent. of bone phosphate in a long ton of phosphate rock is equivalent to 22.4 lbs. and contains 10.26 lbs. of phosphoric acid.

In the wholesale trade, it is customary to sell dried blood, azotine, horn and hoof meals, and concentrated tankage solely on the basis of ammonia, to the entire disregard of the phosphoric acid contained.

Likewise, the insoluble phosphoric acid in dissolved rock is omitted from consideration, and contracts are based solely upon the "available" phosphoric acid; that is, the sum of the "soluble" and "reverted" or "citrate soluble" phosphoric acid; nor in rock phosphates is any claim made for the small quantities of nitrogen and potash they always contain, nor in dissolved bone for the potash present.

Under these conditions, the wholesale cost per pound in New York of the valuable constituents of such materials as furnish but a single fertilizing element, these materials being assumed to be in the state of preparation and in the package in which the manufacturer purchased them, are given in the following table; also, a figure representing a fair retail price at the factory, the materials having undergone no change in treatment or packing, and the allowance for expense and profit in retailing being 20 per cent.

Wholesale Cost per Pound of Fertilizer Constituents (New York).
I. Ingredients Supplying One Constituent.

Material.	Constituent Valued.	Wholesale price. Cents.	Wholesale price plus 20 per cent.
Sulfate of ammonia,	Nitrogen,	14.30	17.16
Nitrate of soda,	Nitrogen,	12.68	15.22
Dried blood, high grade,	Nitrogen,	13.59	16.31
Concentrated tankage,	Nitrogen,	9.86	11.83
Refuse bone-black,	Phosphoric acid total,	3.36	4.03
*Phosphate rock:			
(Peace river, 60 per cent.),	Phosphoric acid total,	.41	.49
(Tennessee, 78 per cent.),	Phosphoric acid total,	.39	.47
(South Carolina, 60 per cent.),	Phosphoric acid total,	.53	.67
Acid phosphate,	Phosphoric acid available,	3.13	3.76
Double manure salts,	Potash,	4.20	5.04
Sulfate of potash,	Potash,	4.28	5.14
Muriate of potash,	Potash,	3.56	4.27
Kainit,	Potash,	3.55	4.26

*The prices of phosphate rock are f. o. b. at the respective points of shipment, not New York, and are taken from the reports of the Engineering and Mining Journal. The prices for potash are taken from the schedule of the Syndicate and those of the remainder from the Oil, Paint and Drug Reporter.

The quotations for bone are given without specific reference to quality, so that it is impossible from these data to fairly apportion their several wholesale values to the nitrogen and phosphoric acid contained in this material. As compared with tankage, the general tendency is to assign a higher commercial rating to the phosphoric acid in bone and to the nitrogen a rating not very different from that given in tankage.

The quotations of Thos. J. White and Company show an average wholesale rate in Baltimore during September, 1901, to March, 1902, for crushed tankage to have been $2.26 per unit of ammonia and $0.10 per unit of bone phosphate of lime. This is equivalent to $2.74 per unit of nitrogen and $0.218 per unit of phosphoric acid. The average composition of the ground bone and bone meal samples analyzed last fall in Pennsylvania was: Phosphoric acid, 22.53 per cent.; nitrogen, 2.94 per cent. The prepared bone contains less fat and moisture and often less nitrogen than the ordinary "rough bone;" but these differences tend, in a manner, to neutralize each other.

Assuming for the rough bone quoted in the New York market the same composition as the bone meal sold in Pennsylvania and for the value of the nitrogen $2.74 per unit, the values per pound of the several constituents would be·

Wholesale Cost per Pound of Fertilizer Constituents, New York.
II. Bone.

Grade.	Constituent Valued.	Wholesale price.	Wholesale price plus 20 per cent.
Rough bone,	Nitrogen,	13.7	16.4
	Phosphoric acid,	2.26	2.71
Ground bone,	Nitrogen,	15.39	18.42
	Phosphoric acid,	2.54	3.04

The average ground bone and bone meal on the retail market are probably inferior in composition to the rough bone on the wholesale market, hence these figures tend to be too high. Direct estimation of the wholesale pound values of acidulated bone (animal bone) cannot be made, as there are no wholesale data available for this purpose; for this computation dependence must be placed upon the retail selling prices.

Valuations in Neighboring States.

It is desirable, from all points of view, that the schedules of valuation throughout a district in which similar market conditions prevail, should differ as little as possible. It has been our practice in the past, to conform our schedule to that adopted after very careful co-operative study of market conditions for each year, by the New England States and New Jersey, except where the peculiar conditions of our market have made the valuations diverge too largely from the actual selling prices, as in the case of ground bone and dissolved rock phosphates. The schedules for these States for 1900 and 1901 are as follows:

Trade Values Adopted by the New England States and New Jersey.

	Cents per lb.		Values of 1902 in per cent. of those of 1901.
	1901.	1902.	
Nitrogen:			
In ammonia salts,	16½	16½	100
In nitrates,	14	14	100
In dry and fine-ground fish,	16	16½	103.1
In meat, blood and mixed fertilizers,	16	16½	100
In fine-ground bone and tankage,	16	16½	100
In coarse bone and tankage,	12	12	100
Phosphoric acid:			
Water soluble,	5	5	100
Citrate soluble,	4½	4½	100
In cotton-seed meal, castor pomace and wood ashes,	4	4	100
In dry, fine-ground fish, bone and tankage,	4	4	100
In coarse fish, bone and tankage,	3	3	100
In mixed fertilizers, insoluble,	2	2	100
Potash:			
In forms free from muriate (chlorid),	5	5	100
As muriate,	4¼	4¼	100

Upon a careful consideration of the changes and tendencies of the wholesale prices of fertilizer ingredients and of the discrepancies occurring since the adoption of the 1901 schedule of valuation, it has been decided that the schedule for use during 1902 should be the same as that adopted for the use of New Jersey and New England except at two points.

For reasons fully discussed in 1897, it is needful to include in the Pennsylvania schedule of valuations, a distinct set of values for phosphoric acid derived from rock as contrasted with that derived from animal materials. Reference to the tables, given on an earlier page, showing the wholesale cost of a pound of phosphoric acid, will make it plain that when it comes from phosphate rock, it costs the fertilizer maker about one-half to three-fourths of a cent at the mines, on the Atlantic seaboard; when from refuse bone-black, delivered at New York, 3.4 cents; when from tankage, about 1.1 cents; and from bone 2.69 cents.

There is nothing to indicate that, after acidulation, the available phosphoric acid from bone is at all better for the crop than that from a good rock lime-phosphate. But so long as the consumer is persuaded that bone phosphoric acid is worth more for his crop than an equal weight of rock phosphoric acid, just so long will the manufacturer of fertilizers be able to command a higher price for those fertilizers reputed to derive their phosphoric acid from bone, and just so long will he, in turn, be obliged to pay more for it on the wholesale market. Now, in some States, the volume of rock phosphoric

acid used is relatively small and the need for its separate valuation not apparent; in other States it predominates to the almost entire exclusion of bone phosphoric acid, so that no distinct valuation for the latter is required; but in Pennsylvania both occupy important positions upon the market and each requires its own set of values. Despite the slightly upward tendency of the acid phosphate market, it is thought needless to change the valuations of these constituents at this time, because the average valuations have, under the existing schedule, considerably exceeded the actual selling prices.

For similar reasons, nitrogen and phosphoric acid in ground bone are valued at lower rates in Pennsylvania than in New England. Owing to the fact that the bone valuations of the past year fell distinctly below the selling prices, a slight increase in the valuations of these goods has been made. Tankage is scheduled with bone, though costing less, because it is little sold at retail.

The schedule for 1901 as a whole is as follows:

Schedule of Values for Fertilizer Ingredients, 1902.

	Cents per pound.
Nitrogen:	
In ammonia salts,	16½
In nitrates,	14
In meat, dried blood and mixed fertilizers,	16½
In cotton-seed meal and castor-pomace,	16½
In fine ground bone and tankage,	11
In coarse bone and tankage,	9
Phosphoric acid:	
Soluble in water, in bone fertilizers,	5
Soluble in water, in rock fertilizers,	3
Soluble in ammonium citrate, in bone fertilizers,	4½
Soluble in ammonium citrate in rock fertilizers,	2½
Insoluble in ammonium citrate, in bone fertilizers,	2
Insoluble in ammonium citrate, in rock,	1½
In fine bone, tankage and fish,	3
In coarse bone and tankage,	2½
In cotton-seed meal, castor pomace and wood ashes,	4
Potash:	
In high-grade sulfate or in forms free from muriate,	5
As muriate,	4¼

Potash in excess of that equivalent to the chlorin present, will be valued as sulfate, and the remainder as muriate.

Nitrogen in mixed fertilizers will be valued as derived from the best sources of organic nitrogen, unless clear evidence to the contrary is obtained.

Phosphoric acid in mixed fertilizers is valued at bone phosphoric acid prices, unless clearly found to be derived from rock phosphate.

Bone is sifted into two grades of fineness: Fine, less than 1-50 inch in diameter; coarse, over 1-50 inch in diameter.

The result obtained by the use of this schedule does not cover the items of mixing, bagging, freight and agents' commission. To cover these, allowances are made as follows:

For freight, an allowance of $2.00 per ton on all fertilizers.

For bagging, an allowance of $1.00 per ton on all fertilizers, except when sold in original packages.

For mixing, an allowance of $1.00 per ton on complete fertilizers and rock-and-potash goods.

For agents' commission, an allowance of 20 per cent. is added to the cash values of the goods ready for shipment.

The mean quotation on freight from New Yoak, Philadelphia and Baltimore to Harrisburg, in January, 1897, was $1.68 per ton, in lots of twelve tons or over; in May, 1899, quotations by the Pennsylvania Railroad were: From New York, $2.40; from Philadelphia, $1.70; and from Baltimore, $1.55; mean rate from the three points, $1.88.

ANALYSES OF SPRING SAMPLES.

Tabulated Analyses of Commercial Fertilizers

FROM

SAMPLES SELECTED BY SPECIAL AGENTS

OF THE

PENNSYLVANIA DEPARTMENT OF AGRICULTURE.

Analyses by DR. WILLIAM FREAR, Chemist of the Department, and of the State College Experiment Station, State College, Pa.

SAMPLES SELECTED FROM JAN. 1, 1902 TO AUG. 1, 1902.

FERTILIZER ANALYSES, JANUARY 1, TO AUGUST 1, 1902.

Since January 1, 1902, there have been received from authorized sampling agents, eight hundred and thirty-eight (838) fertilizer samples, of which four hundred and fifty (450) were subjected to analysis, the remainder being rejected either because they represented brands analyzed last season, or because they were regarded as not certainly representative of the brand whose name they bore. When two or more samples representing the same brand were received, equal portions from the several samples were united and the composite sample was subjected to analysis.

The samples group themselves as follows: 289 complete fertilizers, furnishing phosphoric acid, potash and nitrogen; 2 dissolved bones, furnishing phosphoric acid and nitrogen; 66 rock-and-potash fertilizers, furnishing phosphoric acid and potash; 59 acidulated rock phosphates, furnishing phosphoric acid only; 29 ground bones, furnishing phosphoric acid and nitrogen; 5 miscellaneous fertilizers, which group includes potash salts, nitrate of soda and other substances not properly classified under the foregoing heads.

The determinations to which a complete fertilizer is subjected are as follows: (1) Moisture, useful for the comparison of analyses, for indication of dry condition and fitness for drilling, and also of the conditions under which the fertilizer was kept in the warehouse. (2) Phosphoric acid—total, that portion soluble in water, and, of the residue, that portion not soluble in warm ammonium citrate solution (a solution supposed to represent the action of plant roots upon the fertilizer), which is assumed to have little immediate food value. By difference, it is easy to compute the so-called "reverted" acid, which is the portion insoluble in water but soluble in the citrate. The sum of the soluble and reverted is commonly called the "available" phosphoric acid. (3) Potash soluble in water,—most of that present in green sand marl and crushed minerals, and even some of that present in vegetable materials such as cotton-seed meal, not being included because insoluble in water even after long boiling. (4) Nitrogen—this element is determined by a method which simply accounts for all present, without distinguishing between the quantities present in the several forms of ammonium salts, nitrates or organic matter. (5) Chlorin; this determination is made to afford a basis for estimating the proportion of the potash that is present as chlorid or

muriate, the cheaper source. The computation is made on the assumption that the chlorin present, unless in excess, has been introduced in the form of muriate of potash; but doubtless there are occasional exceptions to this rule. One part of chlorin combines with 1.326 parts of potash to form the pure muriate; knowing the chlorin, it is, therefore, easy to compute the potash equivalent thereto. (7) In the case of ground bone, the state of sub-division is determined by sifting through accurately made sieves; the cost of preparation and especially the promptness of action of bone in the soil depends very largely on the fineness of its particles, the finer being much more quickly useful to the plant.

The law having required the manufacturer to guarantee the amount of certain valuable ingredients present in any brand he may put upon the market, chemical analysis is employed to verify the guaranties stamped upon the fertilizer sacks. It has, therefore, been deemed desirable in this report to enter the guaranty filed by the manufacturer in the office of the Secretary of Agriculture, in such connection with the analytical results that the two may be compared. An unfortunate practice has grown up among manufacturers of so wording the guaranty that it seems to declare the presence in the goods of an amount of a valuable constituent ranging from a certain minimum to a much higher maximum; thus, "Potash, 2 to 4 per cent." is a guaranty not infrequently given. In reality, the sole guaranty is for 2 per cent. The guaranteed amounts given for each brand in the following tables, are copied from the guaranties filed by the maker of the goods with the Secretary of Agriculture, the lowest figure given for any constituent being considered to be the amount guaranteed. For compactness and because no essentially important fact is suppressed thereby, the guaranties for soluble and reverted phosphoric acid have not been given separately, but are combined into a single guaranty for available phosphoric acid; in cases where the maker's guaranty does not specifically mention available phosphoric acid, the sum of the lowest figures given by him for soluble and reverted phosphoric acid is used. The law of 1879 allowed the maker to express his guaranty for nitrogen either in terms of that element or in terms of the ammonia equivalent thereto; since ammonia is composed of three parts of hydrogen and fourteen parts of nitrogen, it is a very simple matter to calculate the amount of one, when the amount of the other is given; the amount of nitrogen multiplied by 1.214 will give the corresponding amount of ammonia, and the amount of ammonia multiplied by 0.824 will give the corresponding amount of nitrogen. In these tables, the expression is in terms of nitrogen.

The law of 1901 abolishes this alternative and requires that the guaranty shall be given in terms of nitrogen. Many manufacturers

after complying with the terms of the law, insert additional items in their guaranties, often with the result of misleading or confusing the buyer; the latter will do well to give heed to those items only that are given as the law requires and that are presented in these tables.

A summary of the analyses made this season may be presented as follows, excepting the miscellaneous class:

Summary of Analyses made this Season.

	Complete fertilizers.	Dissolved bone.	Rock and potash.	Dissolved rock.	Ground bone.
Number of analyses,	289	2	66	59	29
Moisture, per cent.,	8.93	7.83	10.90	9.06	5.89
Phosphoric acid:					
Total, per cent.,	10.77	12.96	11.89	15.88	22.22
Soluble, per cent.,	4.85	2.65	4.95	9.43	.....
Reverted, per cent.,	3.41	4.45	5.37	4.65	.....
Insoluble, per cent.,	2.51	5.86	1.57	1.80	.....
Potash, per cent.,	3.97	.....	3.09	.....	.....
Nitrogen, per cent.,	1.62	1.37	.....	.....	3.43
Mechanical analysis of bone:					
Fine,	.....	.....	.....	.....	69
Coarse,	.....	.....	.....	.....	31
Commercial valuation,	25.33	17.35	15.05	13.44	26.87
Average selling price,	24.10	16.50	16.45	13.73	28.52
Commercial value of samples whose selling price is ascertained,	25.32	17.35	15.05	13.49	26.80

Two tendencies appear upon a comparison between these data and the corresponding figures for the spring of 1901: A diminution of soluble phosphoric acid and a general increase in the percentages of reverted and insoluble phosphoric acid, while the total phosphoric acid is slightly increased; this tendency appeared in a great many brands. The use for acidulation of rock phosphates which, though richer in phosphoric acid, also contain more iron and alumina than heretofore, would account for this tendency, since the phosphates in acidulated goods from such rock tend to revert to insoluble forms. The second tendency is toward the greater use of potash, which appears in both complete fertilizers and rock-and-potash goods. The dissolved bones were very inferior.

The cases of departure of goods from their guaranteed composition observed this season, including only those cases in which it amounted to two-tenths per cent. or more, were as follows:

Summary of Instances of Deficiency from Guaranty.

	Complete fertilizers.	Dissolved bone.	Rock and potash.	Dissolved rock.	Ground bone.
Deficient in four constituents,	1	.....	.....	.....	.....
Deficient in three constituents,	6	.....	.....	.....	.....
Deficient in two constituents,	25	.....	2	2	.....
Deficient in one constituent,	83	2	18	7	5
Total samples in which deficiency occurred,	115	2	20	9	5

The cases of deficiency noted during the past seven seasons in the goods as compared with their guaranties, expressed in percentage of the total number of goods of each class analyzed, are as follows:

Percentages of Deficiency, 1899—1902.

	Spring, 1899.	Fall, 1899.	Spring, 1900.	Fall, 1900.	Spring, 1901.	Fall, 1901.	Spring, 1902.
Complete fertilizers,	38.4	33.7	42.0	40.8	31.6	34.6	40.00
Dissolved bone,	50.0	14.3	*50.0	*50.0	†	40.0	*100.00
Rock and potash,	19.1	34.2	29.2	33.3	31.7	26.2	30.3
Dissolved rock,	13.8	14.5	5.4	19.4	22.5	8.2	15.2
Ground bone,	18.4	25.3	36.7	11.8	34.1	18.2	17.2
All classes except miscellaneous,	30.9	29.2	35.2	34.3	30.8	27.6	34.2

*Only two samples analyzed.
†Only one sample analyzed.

Marked variations in the general percentages of deficiency occur from year to year. During the past season, they have been somewhat more numerous than usual. In most samples which are found below guaranty at one point, there is an excess at some other point, indicating that the cause of departure from the composition guaranteed lay not in the failure of the manufacturer to use the requisite components, but in his failure to secure a uniform mixture.

Considering all cases of complete fertilizers in which guaranties were strictly comparable with stated analytical results and sufficiently complete for the purpose: Of the one hundred and fifteen samples in which there was deficiency at some point, there were only

seventeen in which there was not distinct excess above guaranty at some other point, though sometimes such excess was not sufficient to counter-balance the deficiency. Naturally, the tendency is toward excess of the cheaper constituent, phosphoric acid, and deficiency of potash or nitrogen, as appears below.

Two-thirds of the brands were up to or above guaranty at all points. The true average condition of the market for complete fertilizers will be more fairly exhibited by a comparison of the average composition of all samples for which guaranties are recorded with the average of the corresponding guaranties; they are as follows:

Average Composition and Guaranty Compared.

	Average composition. Per cent.	Average guaranty. Per cent.
Fall, 1901.		
Phosphoric acid:		
Total,	11.51	9.82
Available,	10.60	8.06
Potash,	2.77	2.66
Nitrogen,	1.39	1.39
Spring, 1902.		
Phosphoric acid:		
Total,	10.80	9.29
Available,	8.25	7.82
Potash,	3.90	3.66
Nitrogen,	1.62	1.58

It is of interest to note how closely the system of valuations, based upon the wholesale prices of raw materials in the principal markets during the most important buying season and upon certain average allowances for expense and profit on the part of the mixer and jobber, coincides with the retail prices later ascertained. A comparison for several seasons past is given below:

Comparison of Selling Price and Valuation, 1899—1902.

	Selling price.	Valuation.	Excess of valuation over selling price.
Complete fertilizers:			
1899, Spring,	$23.60	$24.70	$1.10
Fall,	22.98	23.42	.44
1900, Spring,	25.38	24.61	—.77
Fall,	23.22	23.84	.62
1901, Spring,	23.92	24.76	.84
Fall,	22.28	23.75	1.47
1902, Spring,	24.10	25.33	1.23
Dissolved bone:			
1899, Spring,	21.75	21.81	.06
Fall,	19.00	21.12	2.12
1900, Spring,	26.00	30.87	4.87
Fall,	23.50	22.74	—.76
1901, Spring,	28.00	29.00	1.00
Fall,	23.91	23.36	—.55
1902, Spring,	16.50	17.35	.85
Rock and potash:			
1899, Spring,	16.83	15.16	—1.67
Fall,	17.28	14.53	—2.75
1900, Spring,	17.35	14.71	—2.64
Fall,	18.11	14.63	—3.48
1901, Spring,	16.20	14.60	—1.60
Fall,	16.09	14.23	—1.86
1902, Spring,	16.45	15.05	—1.40
Dissolved rock:			
1899, Spring,	13.36	14.03	.67
Fall,	12.64	13.13	.49
1900, Spring,	13.57	13.48	—.09
Fall,	13.96	13.11	—.85
1901, Spring,	13.90	13.51	—.39
Fall,	13.18	13.82	.64
1902, Spring,	13.73	13.49	—.24
Ground bone:			
1899, Spring,	26.67	28.11	1.44
Fall,	24.98	27.23	2.25
1900, Spring,	28.42	25.91	—2.51
Fall,	28.73	26.87	—1.86
1901, Spring,	27.59	28.71	1.12
Fall,	25.94	27.69	1.75
1902, Spring,	28.52	26.80	—1.72

The schedule of valuation adopted for use this year has given valuations agreeing well with the market prices of the spring trade; the only exceptions is in the case of ground bone in which the average valuation appears about as far below the average selling price, as it was above the latter under the schedule of 1901. The true relation can be ascertained only by taking into account the average freight to points of sale from which samples were taken this year. Rock-and-potash selling prices are always high in comparison with those of complete fertilizers, but the disparity seems to be diminishing.

The results of the United States Census relative to manufactures being now available, some facts of especial interest respecting the fertilizer trade appear. Prior to the consideration of these data, a comparison of the average composition of the complete fertilizers analyzed by this Control in 1890 and 1900 is given;

	1890. Per cent.	1900. Per cent.
Moisture,	12.20	9.11
Phosphoric acid:		
Total,	12.47	10.89
Soluble,	6.36	4 87
Reverted,	2.98	3.62
Insoluble,	3.13	2.31
Potash,	3.04	3.43
Nitrogen,	1.86	1.67
Valuation,	$30.06	$24.35
Selling price,	28.64	21.68

That is to say, one dollar bought in complete fertilizers at the two periods the following quantities of the valuable constituents:

	1890. Pounds.	1900. Pounds.
Phosphoric acid,	8.71	8.75
Potash,	2.12	2.78
Nitrogen,	1.29	1.35

That is, for the same money, the retail purchaser secured in 1900 about the same amount of phosphoric acid, thirty-one per cent. more potash and nearly five per cent. more nitrogen than in 1890.

A brief summary of the Census statistics for 1890 and 1900 showing the values involved in the fertilizer manufacture of the United States is as follows:

	1890.	1900.
Number of establishments,	390	422
Capital,	$40,594,168	$60,685,763
Wage earners employed,	9,026	11,581
Wages paid (total),	$3,417,870	$4,185,289
Miscellaneous expenses,	$2,790,012	$3,734,285
Cost of materials used,	$25,113,874	$28,958,473
Value of products,	$29,180,844	$44,657,385

From these the following comparative statement for the two periods is derived:

	1890.	1900.
Average wages paid each wage earner,	$378.67	$361.39
Capital invested for each $1 of raw material manufactured,	1.62	2.10
Cost of manufacturing $1 of raw material into finished products:		
Cost of raw material,	$1.00	$1.00
Interest on capital corresponding,	.081	.105
Wages,	.136	.145
Miscellaneous expenses,	.111	.128
Total cost,	$1.328	$1.378
Estimated value of products,	$1.560	$1.543

In general, that is, the stated cost of manufacture has increased during the decade, about 4 per cent., while the estimated value of the product has fallen between one and two per cent., the net profits being 17.5 per cent. of the cost of production in 1890 and 11.9 per cent. in 1900.

This decrease in net profit is due chiefly to increased cost of production. A little more than one-fourth of the increase occurs in the item of miscellaneous expenses, including insurance, interest, taxes, etc.; almost an equal fraction of the increase is due to the smaller earning efficiency of $1 spent in wages (including salaries), despite the fact that the average wages paid to each earner is 7.5 per cent. less than in 1890. One-half of the whole increase is attributable, however, to the interest item on the stated capitalization, which has increased almost thirty per cent. for each dollar's worth of raw material used.

This stated increase is distributed as follows, in terms of the items for 1890:

	Per cent.
Land,	28.2
Buildings,	54.3
Machinery and implements,	56.4
Total plant,	49.1
Cash and sundries,	49.7

This increase of stated capitalization, proportionally so much greater than the increase in the cost of raw materials and the value of finished products, naturally raises a question as to how much of the stated capital represents money invested. This is at present a question for stock buyers. It is sufficient to the consumer to know that, as compared with 1890, he was in 1900 able to purchase more

fertilizer for one dollar; and that whereas in 1890 he was obliged to pay at the factory 56 cents advance upon every dollar's worth of raw material used by the manufacturer, in 1900 the advance was only 54.3 cents.

The foregoing advances are not comparable with those allowed in the schedule of valuations to the mixer, for the cost of acidulation is excluded in the latter case, having been already included in the wholesale value of the acid rock and dissolved bone.

The analytical work has been performed by the following assistant chemists: Nitrogen, Mr. M. S. McDowell; soluble and insoluble phosphoric acid, Mr. C. W. Norris; potash and chlorin, Mr. M. H. Pingree; moisture and total phosphoric acid, Mr. N. W. Buckhout. The listing and preparation of samples were in charge of Mr. McDowell; the computation and care of records in charge of Misses M. Garner and E. F. Jones.

Respectfully submitted,

WM. FREAR.

August 5, 1902.

TABULATED ANALYSES.

COMPLETE

Furnishing Phosphoric Acid,

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Allegheny City Fert. Works, Allegheny, Pa.		
799	Potato Manure,	J. E. McFadden, Cyrus,	5.46
805	Pure Potato Manure,	Lewis Patterson, Slippery Rock,	6.02
642	Raw Bone Phosphate,	L. & F. Hoburg, Sharpsburg,	7.22
800		J. E. McFadden, Cyrus,	
	The American Agri. Chem. Co., New York.		
	Bradley Branch, New York.		
646	†Bradley's Bean and Potato Phosphate,	S. J. Saint, Sharpsburg,	10.57
469		Daniel Hurley, North Rome,	
330		J. M. Fisk, Bills,	
715		Punxsutawney Hdw. Co., Punxsut'y,	
786		J. B. Miller, Wesley,	
718	†Bradley's Dissolved Bone and Potash,	Punxsutawney Hdw. Co., Punxsu'ty,	9.87
644		S. J. Saint, Sharpsburg,	
468		Daniel Hurley, North Rome,	
785		J. B. Miller, Wesley,	
828		J. H. Sheffer, Knox,	
717	†Bradley's Niagara Phosphate,	Punxsutawney Hdw. Co., Punxsu'ty,	7.70
647		S. J. Saint, Sharpsburg,	
632		C. B. Neiderheiser, Donegal,	
803		E. H. Adams, Wick,	
827		J. H. Sheffer, Knox,	
783	†Bradley's Sea Fowl Guano,	Trax & James, Oil City,	9.79
645		S. J. Saint, Sharpsburg,	
802		E. H. Adams, Wick,	
826		——, Knox,	
	Canton Chemical Branch, Baltimore, Md.		
242	Canton Chemical Ammoniated Bone,	Jones Paxton, Hatboro,	9.67
335	Canton Chemical, Baker's Standard H. G. Guano,	Jos. D. Miller, Rockwood,	8.99

†Composite sample.

FERTILIZERS.

Potash and Nitrogen.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
4.58	1.69	4.36	**10.63**	10.00	***6.27**	8.00	3.00	2.50	**6.10**	6.00	***2.17**	2.47	$29.04	$29.00	799
3.46	2.21	5.25	**10.92**	10.00	***5.67**	8.00	4.40	2.35	**6.75**	6.00	**2.66**	2.47	31.24	25.00	805
4.95	2.65	4.09	**11.69**	10.00	***7.60**	9.00	4.41	.....	**4.41**	4.00	***1.53**	1.65	25.81	26.00	642
														25.00	800
														25.00	646
														24.00	469
6.01	3.13	1.86	**11.00**	9.00	**9.14**	8.00	4.31	.....	**4.31**	4.00	**1.13**	.82	24.85	.....	330
														30.00	715
														25.00	786
														24.00	718
														23.00	644
6.00	3.10	2.04	**11.14**	9.00	**9.10**	8.00	2.38	.....	**2.38**	2.00	**1.34**	1.03	23.73	24.50	463
														24.00	785
														25.00	823
														23.00	717
														22.00	647
5.05	3.54	2.17	**10.76**	8.00	**8.59**	7.00	1.27	.....	**1.27**	1.00	**1.09**	.82	20.96	20.00	632
														22.00	803
														23.00	827
														25.00	783
6.15	2.75	3.47	**12.37**	9.00	**8.90**	8.00	2.14	.....	**2.14**	1.50	**2.20**	2.06	27.32	25.00	645
														24.00	802
														30.00	826
3.89	3.66	2.60	**10.15**	9.00	***7.55**	8.00	1.88	.....	**1.88**	2.00	***1.15**	1.24	20.78	21.00	242
4.92	3.48	1.96	**10.36**	9.00	**8.40**	8.00	3.23	.....	**3.23**	3.00	**2.10**	2.06	26 62	25.00	335

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
356	†Canton Chemical, Baker's Special Wheat, Corn and Grass Mixture,	T. J. Jacobs, Somerfield,	10.02
334		Jas. D. Miller, Rockwood,	
498		A. D. Trexler, Trexler,	
361	†Canton Chemical, C. C. C. Special Compound,	King Bros., Uniontown,	8.68
74		D. B. Meyers, Gardners Sta.,	
374		S. F. Miller, Mechanicsburg,	
694		H. L. Orr, Tyrone,	
610	†Canton Chemical, Eagle Phosphate,	J. A. Romberger, Elizabethville,	7.13
241		Jones & Paxton, Hatboro,	
666		Styles, Miller & Co., Martinsburg,	
684		H. F. Gump, Everett,	
537	Canton Chemical, Harrow Brand Crop Grower,	J. W. Hostetter, Walnut,	7.90
371	†Canton Chemical, Potato Manure, 1½—6—5,	S. F. Miller, Mechanicsburg,	8.45
360		King Bros., Uniontown,	
357		T. J. Jacobs, Somerfield,	
126		J. H. Wingert, Lewisburg,	
499		A. D. Trexler, Trexler,	
671		H. L. Stultz, Duncansville,	
695		H. L. Orr, Tyrone,	
743		W. S. Weaver, Easton,	
240	Canton Chemical, Resurgam Guano,	Jones & Paxson, Hatboro,	10.00
	Clark's Cove Branch, New York.		
153	†Clark's Cove King Philip Alkaline Guano,	Peter Haus, New Columbia,	11.73
52		E. J. Bushey, Dillsburg, R. R. track,	
546		Fowler Ellis, Franklindale,	
152	Clark's Cove Potato and Hop Grower,	Thomas Grover, New Columbia,	9.86
538		P. M. Hunsinger, Dushore,	
	Crocker Branch, Buffalo, N. Y.		
190	Crocker's Ammoniated Bone Superphosphate,	John A. Loose, Berne,	6.49
535	Crocker's Complete New Rival,	H. B. Mitchell & Co., Emlenton,	7.87

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial* value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
														$22.00	356
7.76	2.58	1.38	**11.72**	10.00	**10.34**	9.00	2.35	.....	**2.35**	2.00	**1.15**	.82	$24.12	21.00	334
														22.00	498
														32.00	361
														25.00	74
6.01	2.65	2.05	**10.71**	9.00	**8.66**	8.00	6.23	.....	**6.23**	6.00	**2.17**	2.06	30.34	30.00	374
														33.00	694
														17.00	610
														19.00	241
3.36	4.86	1.75	**9.97**	8.00	**8.22**	7.00	1.31	.....	**1.31**	1.00	**.99**	.82	19.80	18.75	666
														21.00	684
5.28	3.89	1.11	**10.28**	9.00	**9.17**	8.00	1.36	.....	**1.36**	1.00	**.93**	.82	20.65	.....	537
														24.00	371
														28.00	360
														21.00	357
														20.00	126
3.34	3.55	1.54	**8.43**	7.00	**6.89**	6.00	5.10	.....	**5.10**	5.00	**1.43**	1.24	23.96	25.00	499
														25.00	671
														28.00	695
														25.00	743
4.72	3.61	2.08	**10.41**	9.00	**8.33**	8.00	4.44	.....	**4.44**	4.00	**1.20**	.82	24.22	22.00	240
														20.00	153
5.37	3.59	1.42	**10.38**	9.00	**8.96**	8.00	2.52	.....	**2.52**	2.00	**1.40**	1.03	23.54	18.50	52
														20.00	546
														24.00	152
3.02	3.90	1.83	**8.75**	7.00	**6.92**	6.00	4.98	.....	***4.98**	5.00	**1.51**	1.24	24.14	30.00	538
5.22	4.22	1.81	**11.25**	11.00	**9.44**	9.00	2.24	.....	**2.24**	2.00	***2.42**	2.47	27.90	24.00	190
5.69	4.19	2.34	**12.22**	11.00	**9.88**	9.00	2.18	.....	**2.18**	2.00	**1.45**	1.24	24.87	23.00	835

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
373	†Crocker's General Crop Fertilizer,	S. F. Miller, Mechanicsburg,	9.13
191		John A. Loose, Berne,	
752		Jos. Froelich, Mountville,	
834	Crocker's General Crop Grower,	H. B. Mitchell & Co., Emlenton,	7.95
372	Crocker's Universal Grain Grower,	S. F. Miller, Mechanicsburg,	12.63
	Detrick Branch, Baltimore, Md		
519	Detrick's Bone Phosphate for Potatoes and Tobacco,	Jas. McCully, Mifflintown,	12.21
654	†Detrick's Corn and Oats Fertilizer,	Wm. H. Heckert, Bakerstown,	8.55
724		John Bodenshatz, Wilmore,	
216	†Detrick's K. K. K. Kangaroo Komplete Kompound,	W. T. Hoover, Pt. Matilda,	9.43
14		Passmore & Gillespie, Sylmar,	
725		John Bodenshatz, Wilmore,	
432	Detrick's Quickstep Bone Phosphate for Potatoes and Tobacco,	J. S. Fobst, Emaus,	10.05
	Great Eastern Branch, Rutland, Vt.		
604	†G. E. English Wheat Grower, 1x8x2,	W. E. Smith, Laurelton,	9.73
820		Neely Bros., Alum Rock,	
475	†G. E. General,	O. Tiffany, Dushore Sta.,	10.29
327		Jos. M. Miller, Bills,	
315		N. G. Gramling, Elton,	
251		William Jones, Kelton,	
487		Jos. Yorkon, Dushore,	
818		J. B. Atwell, Big Bend,	
819		Neeley Bros., Alum Rock,	
329	G. E. Good Grower Potato Phosphate,	J. M. Fisk, Geigers Sta.,	9.85
486	G. E. Northern Corn Grower,	Jos. Yorkon, Dushore,	9.78
314	†G. E. Northern Corn Special,	N. G. Gramling, Elton,	8.77
497		A. S. Lutz, Wanamaker,	
488	†G. E. Wheat Special,	Jos. Yorkon, Dushore,	8.88
821		McEwen & Curll, Sligo,	
485	†G. E. Vegetable and Tobacco Fertilizer,	Jos. Yorkon, Dushore,	9.59
545		Vine Avery, Monroeton,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
														$18.50	373
5.05	3.71	1.10	**9.86**	8.00	**8.76**	7.00	1.40	.....	**1.40**	1.00	**.97**	.82	$20.18	18.00	191
														.....	752
6.27	2.27	1.27	**9.81**	8.00	**8.54**	7.00	1.63	.....	**1.63**	1.00	**.86**	.82	20.05	20.00	834
7.63	2.21	.90	**10.74**	9.00	**9.84**	8.00	2.40	.....	**2.40**	2.00	**1.13**	.82	23.40	20.00	372
7.57	1.96	.48	**10.01**	9.00	**9.53**	8.00	4.22	.....	**4.22**	4.00	***2.40**	2.47	29.60	26.00	519
														21.00	654
6.33	3.39	1.43	**11.15**	10.00	**9.72**	9.00	2.92	.....	***2.92**	3.00	**.89**	.82	22.89	24.00	724
														25.00	216
3.48	4.41	2.68	**10.57**	9.00	***7.89**	8.00	4.07	.....	**4.07**	3.00	**2.02**	1.65	26.55	24.00	14
														26.00	725
6.11	3.92	1.95	**11.98**	9.00	**10.03**	8.00	3.00	.....	***3.00**	4.00	***2.34**	2.47	29.30	26.00	432
														18.00	604
4.44	4.19	1.93	**10.56**	9.00	**8.63**	8.00	2.34	.....	**2.34**	2.00	**1.06**	.82	21.75	24.00	820
														.....	475
														19.00	327
														22.00	315
5.95	2.97	1.68	**10.60**	9.00	**8.92**	8.00	4.43	.....	**4.43**	4.00	**.83**	.82	23.46	21.00	251
														22.00	487
														22.00	818
														22.00	819
5.67	2.65	1.44	**9.76**	.....	**8.32**	.....	4.70	.....	**4.70**	.....	**1.19**	.....	24.30	.....	329
7.98	2.37	1.42	**11.77**	11.00	**10.35**	9.00	2.65	.....	**2.65**	2.00	**2.36**	2.47	29.23	26.00	486
5.94	3.02	2.29	**11.25**	11.00	***8.96**	9.00	2.41	.....	**2.41**	2.00	**2.47**	2.47	28.04	26.00	314
														24.00	497
6.44	2.64	1.94	**11.02**	9.00	**9.08**	8.00	2.38	.....	**2.38**	2.00	**1.72**	1.65	25.10	26.00	488
														24.00	821
7.22	2.56	2.23	**12.01**	9.00	**9.78**	8.00	3.25	.....	**3.25**	3.00	**2.12**	2.06	28.51	25.00	485
														22.25	545

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	LAZARETTO GUANO BRANCH, BALTIMORE, MD.		
338	Lazaretto Special Potato Fertilizer,	Walker Bros., Glade,	9.98
	MARYLAND BRANCH, BALTIMORE, MD.		
82	†Maryland O. K. Ammoniated,	J. H. Little, Gardners Sta.,	9.68
653		R. M. Gibson, Gibsonia,	
	MILSOM BRANCH, EAST BUFFALO, N. Y.		
831	Milsom's Buffalo Fertilizer,	George Miller, Kossuth,	10.63
424	†Milsom's Buffalo Guano,	Jacob Hollenbach, Shoemakersville,	8.89
833		George Miller, Kossuth,	
832	Milsom's Wheat, Oats and Barley,	George Miller, Kossuth,	10.66
	MORO-PHILIPS BRANCH, PHILADELPHIA, PA.		
766	†Moro-Philips Farmer's Phosphate,	Ewing & Kinsloe, Newton Hamilton,	9.12
767		Ewing & Kinsloe, Newton Hamilton,	
503	†Moro-Philips Potato Mixture,	N. E. Hunsicker, Mantz,	8.67
591		H. G. Supplee, Bloomsburg,	
504	Moro-Philips Special Fertilizer,	N. E. Hunsicker, Mantz,	8.37
	PACKER'S UNION BRANCH, NEW YORK.		
343	†Packer's Union American Wheat and Rye Grower,	I. G. Miller, Kimmel,	9.35
85		J. W. Glatfelter, Rossville,	
536		J. H. Kirk, East Waterford,	
345	†Packer's Union Animal Corn Fertilizer,	I. G. Miller, Kimmel,	9.96
472		Jas. Avery, Dushore,	
348	Packer's Union Gardeners' Complete Manure,	Ross Snyder, N. Lexington,	10.21
639	†Packer's Union Potato Manure,	C. A. Wagner, Buckstown,	8.72
474		Jas. Avery, Dushore,	
796		R. M. McDowell, Big Bend,	
344	†Packer's Union Universal Fertilizer,	I. G. Miller, Kimmel,	8.85
259		M. L. Kaufman, Atglen,	
349		Ross Snyder, N. Lexington,	
795		R. M. McDowell, Big Bend,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
6.23	3.32	1.42	**10.97**	9.00	**9.55**	8.00	4.21	.....	**4.21**	4.00	**1.07**	.82	$24.58	$20.00	338
5.91	3.27	1.68	**10.86**	9.00	**9.18**	8.00	2.27	.....	**2.27**	2.00	**1.08**	.82	22.46	18.50	82
														19.00	653
5.84	2.40	3.67	**11.91**	9.00	**8.24**	8.00	2.14	.....	**2.14**	1.50	**2.28**	2.06	27.07	26.00	831
4.95	3.46	2.46	**10.87**	9.00	**8.41**	8.00	4.30	.....	**4.30**	4.00	***.81**	.82	22.81	20.00	424
														24.00	833
6.03	3.20	2.23	**11.46**	9.00	**9.23**	8.00	2.00	.52	**2.52**	2.00	**1.12**	.82	23.17	23.00	832
5.56	3.40	.88	**9.84**	8.00	**8.96**	7.00	1.46	.....	**1.46**	1.00	**1.14**	.82	21.20	17.25	766
														17.25	767
4.86	2.42	2.06	**9.34**	7.00	**7.28**	6.00	5.38	.....	**5.38**	5.00	**1.31**	1.24	24.51	22.00	503
														27.00	591
4.92	2.93	2.46	**10.31**	9.00	***7.85**	8.00	3.51	.....	**3.51**	3.00	***1.91**	2.06	25.75	23.00	504
5.13	3.68	1.02	**9.83**	9.00	**8.81**	8.00	2.19	.....	**2.19**	2.00	**.91**	.82	20.86	18.00	343
														18.00	85
														21.00	536
7.30	2.63	1.91	**11.84**	11.00	**9.93**	9.00	2.32	.....	**2.32**	2.00	**2.64**	2.47	29.79	23.00	345
														.....	472
5.26	2.83	1.85	**9.94**	7.00	**8.09**	6.00	7.06	.....	***7.06**	10.00	**3.35**	3.30	35.13	29.00	348
6.89	2.28	2.46	**11.63**	9.00	**9.17**	8.00	4.89	.....	***4.89**	6.00	**2.21**	2.06	30.06	21.75	639
														.....	474
														27.00	796
5.63	3.03	1.65	**10.31**	9.00	**8.66**	8.00	3.96	.....	***3.96**	4.00	**1.06**	.82	23.41	20.00	344
														16.00	259
														20.00	349
														22.50	795

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	QUINNIPIAC BRANCH, NEW YORK.		
58	†Quinnipiac Climax Phosphate,	Paxton Fl. & Feed Co., Bowmansdale,	10.38
742		S. B. Sechler, Drehrsville,	
59	†Quinnipiac Mohawk Fertilizer,	Paxton Fl. & Feed Co., Bowmansdale,	9.25
741		S. B. Sechler, Drehrsville,	
	REESE BRANCH, BALTIMORE, MD.		
495	Reese's Potato Manure,	Wm. H. Reitz, Lynport,	8.51
212	Reese's Potato Phosphate,	Oscar White, Tompkinsville,	11.53
	Sharpless & Carpenter Branch, Phila.		
40	†S. & C's Dissolved Phosphate for Potatoes and General Use,	J. Watson Croft, Ambler,	9.60
548		Fowler Ellis, Franklindale,	
547	S. & C's Farmer's Bone Phosphate,	Fowler Ellis, Franklindale,	10.98
41	†S. & C's Gilt Edge Potato and Tobacco Manure,	J. Watson Croft, Ambler,	10.34
176		L. A. Geiger, Joanna,	
39	S. & C's No. 1 Bone Phosphate,	J. Watson Croft, Ambler,	7.48
177	†S. & C's Potato, Corn and Truck Guano,	L. A. Geiger, Joanna,	9.58
758		J. I. Gross, Shindle,	
174	S. & C's Royal Spring Mixture,	L. A. Geiger, Joanna,	9.77
	Susquehanna Branch, Baltimore, Md.		
542	†Susquehanna Crop Grower,	A. B. Cranmer, Monroeton,	7.80
617		W. A. Barlets, Dauphin,	
541	†Susquehanna Potato Phosphate,	A. B. Cranmer, Monroeton,	10.43
422		Sol. H. Lenhart & Son, Hamburg,	
3		Jos Brown, Kelton,	
576		J. N. Getz, Lock Haven,	
616		W. A. Barlets, Dauphin,	
423	†Susquehanna XXV Phosphate,	Sol. H. Lenhart & Son, Hamburg,	7.94
95		Jas. Lean & Son, Dillsburg,	
577		J. N. Getz, Lock Haven,	
618		W. A. Barlets, Dauphin,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
4.93	3.63	1.54	**10.10**	9.00	**8.56**	8.00	2.11	.....	**2.11**	2.00	**1.16**	1.03	$21.68	$20.00	58
														20.00	742
4.24	3.64	1.06	**8.94**	8.00	**7.88**	7.00	1.22	.....	**1.22**	1.00	**.90**	.82	18.74	18.00	59
														16.00	741
5.63	3.22	1.08	***9.93**	10.00	***8.85**	9.00	6.84	.....	***6.84**	7.00	**1.00**	.82	26.11	28.00	495
6.14	2.29	2.04	**10.47**	9.00	**8.43**	8.00	5.65	.....	***5.65**	6.00	***1.85**	2.06	28.32	.....	212
3.69	4.51	2.42	**10.62**	8.00	**8.20**	7.00	6.05	.....	**6.05**	1.00	**2.09**	.82	29.34	27.00	40
														25.00	548
5.33	3.31	1.66	**10.30**	.....	**8.64**	.....	4.22	.....	**4.22**	.....	**1.18**	.....	24.21	19.00	547
														28.00	41
5.32	3.06	1.54	**9.92**	9.00	**8.38**	8.00	10.17	.....	**10.17**	10.00	***1.57**	1.65	31.30	28.00	176
2.30	5.08	2.80	**10.18**	9.00	***7.38**	8.00	2.26	.....	**2.26**	2.00	**1.68**	1.65	23.04	22.00	39
														22.00	177
3.50	2.88	1.43	**7.81**	7.00	**6.38**	6.00	4.94	.....	***4.94**	5.00	**1.37**	1.24	22.81	21.00	758
4.89	3.59	1.80	**10.28**	9.00	**8.48**	8.00	2.11	.....	**2.11**	2.00	**.89**	.82	20.74	20.00	174
														19.00	542
3.40	5.56	1.20	**10.16**	8.00	**8.96**	7.00	1.34	.....	**1.34**	1.00	**.99**	.82	20.40	22.00	617
														26.00	541
														26.00	422
6.65	2.02	1.71	**10.38**	9.00	**8.67**	8.00	5.50	.....	**5.50**	5.00	***1.54**	1.65	27.18	25.00	3
														30.00	576
														28.00	616
														18.00	423
														20.00	95
3.87	4.55	1.12	**9.54**	9.00	**8.42**	8.00	1.31	.....	**1.31**	1.00	**.92**	.82	19.42	28.00	577
														23.00	618

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Tygert-Allen Branch, Philadelphia, Pa.		
500	†Tygert-Allen's Popular Phosphate,	F. S. Balliet, East Penn,	9.80
437		J. Singwaster & Co., Macungie,	
540		J. L. Ward, S. Towanda,	
436	Tygert-Allen's Special Brand Potato Manure,	J. Singwaster & Co., Macungie,	10.09
350	†Tygert-Allen's Special for Wheat and Grass,	R. S. McMillen, Kingwood,	8.50
435		J. Singwaster & Co., Macungie,	
62	Tygert-Allen's Standard Bone Phosphate,	Paxton Fl. & Feed Co., Bowmansdale,	13.46
61	Tygert-Allen's Star Potato Grower,	Paxton Fl. & Feed Co., Bowmansdale,	9.20
	Wheeler Branch, Rutland, Vt.		
448	†Wheeler's Corn Fertilizer,	W. A. Fish, Dimock,	9.39
222		J. W. Zeigler, Rebersburg,	
794		R. M. McDowell, Big Bend,	
449	†Wheeler's Royal Wheat Grower,	W. A. Fish, Dimock,	9.18
252		William Jones, Kelton,	
170		H. B. Best, Joanna,	
456		E. H. Thomas, Springville,	
793		R. M. McDowell, Big Bend,	
447	Wheeler's Potato Manure,	W. A. Fish, Dimock,	9.26
	Williams & Clark Branch, New York.		
434	†Williams & Clark's American H. G. Special,	J. Singwaster & Co., Macungie,	8.28
505		N. E. Hunsicker, Mantz,	
145	†Williams & Clark's Good Grower Potato Phosphate,	F. W. Lindner, Pottsgrove,	9.07
770		Wm. M. Atkinson, McVeytown,	
769	Williams & Clark's Prolific Fertilizer,	Wm. M. Atkinson, McVeytown,	8.29
144	Williams & Clark's Royal Bone Phosphate,	F. W. Lindner, Pottsgrove,	10.03
	American Reduction Co., Pittsburg, Pa.		
113	†Common Sense,	John Weaver, Benton Borough,	10.9
798		C. E. McQuiston, Cyrus,	
112	†Vegetable Manure,	John Weaver, Benton Borough,	8.41
797		C. E. McQuiston, Cyrus,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
														$20.00	500
6.06	3.08	1.51	**10.65**	9.00	**9.14**	8.00	2.42	.....	**2.42**	2.00	**1.04**	.82	$22.34	19.50	437
														21.00	540
5.75	2.34	2.26	**10.35**	9.00	**8.09**	8.00	6.98	.....	**6.98**	6.00	***1.95**	2.06	29.79	26.50	436
														17.00	350
4.68	3.42	1.25	**9.35**	8.00	**8.10**	7.00	1.37	.....	**1.37**	1.00	**1.00**	.82	19.65	18.00	435
7.87	1.84	.84	**10.55**	9.00	**9.71**	8.00	2.17	.....	**2.17**	2.00	**1.74**	1.65	25.36	22.00	62
2.91	3.68	1.21	**7.80**	7.00	**6.59**	6.00	6.62	.....	**6.62**	5.00	**1.84**	1.24	26.52	25.00	61
														21.50	448
7.31	2.07	1.52	**10.90**	9.00	**9.38**	8.00	2.42	.....	**2.42**	2.00	**1.80**	1.65	25.72	21.00	222
														22.00	794
														19.00	449
														19.00	252
5.98	2.97	1.72	**10.67**	9.00	**8.95**	8.00	2.67	.....	**2.67**	2.00	**1.08**	.82	22.66	18.00	170
														22.00	456
														20.50	793
6.98	2.16	2.50	**11.64**	9.00	**9.14**	8.00	3.61	.....	**3.61**	3.00	**2.12**	2.06	28.32	24.00	447
														32.00	434
5.00	2.82	2.46	**10.28**	9.00	***7.82**	8.00	6.94	.....	**6.94**	7.00	***2.99**	3.30	33.63	32.00	505
														24.00	145
4.66	3.26	1.38	**9.30**	7.00	**7.92**	6.00	4.69	.....	***4.69**	5.00	**1.37**	1.24	24.32	23.00	770
3.72	4.54	1.12	**9.38**	8.00	**8.26**	7.00	1.34	.....	**1.34**	1.00	**.97**	.82	19.50	18.00	769
6.90	2.19	1.39	**10.48**	9.00	**9.09**	8.00	2.38	.....	**2.38**	2.00	**1.06**	1.03	22.34	24.00	144
														18.00	113
1.52	2.66	6.27	**10.45**	7.00	***4.18**	6.00	1.18	.....	**1.18**	1.00	**1.75**	1.65	20.29	18.00	798
														26.00	112
3.45	3.00	3.65	**10.10**	7.00	**6.45**	6.00	7.49	.....	**7.49**	6.00	***2.06**	2.47	29.21	23.00	797

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	The Armour Fertilizer Works, Chicago, Ill.		
120	Bone, Blood and Potash,	J. W. Painter & Co., Red Top,	8.53
380	†Fruit and Root Crop Special,	D. E. Brown, East Berlin,	8.21
321		Wallace Sherbine, Willmore,	
121		J. W. Painter & Co., Red Top,	
678		J. S. Hershberger, Everett,	
759		Isaac Shirley, McClure,	
322	†Grain Grower,	Wallace Sherbine, Willmore,	8.04
123		J. W. Painter & Co., Red Top,	
630		Smith & Son, Mt. Pleasant,	
682		J. S. Hershberger, Everett,	
370	†H. G. Potato,	Smith & Son, Mt. Pleasant,	7.60
679		J. S. Hershberger, Everett,	
29	†Royal Ammoniated Bone,	Passmore & Gillespie, Nottingham,	9.21
381		D. E. Brown, East Berlin,	
611	Special Mixture,	J. A. Romberger, Elizabethville,	8.08
320	†Wheat, Corn and Oats Special,	Wallace Sherbine, Willmore,	7.73
122		J. W. Painter & Co., Red Top,	
631		Smith & Son, Mt. Pleasant,	
	R. S. Aucker, Shamokin, Pa.		
627	Bone and Slaughter House Phosphate, Grade A,	Geo. R. Hendricks, Selinsgrove,	5.76
629	Bone and Slaughter House Phosphate, Grade B,	Geo. R. Hendricks, Selinsgrove,	5.12
755	Bone and Slaughter House Phosphate, Grade D,	Geo. R. Hendricks, Selinsgrove,	5.84
756	Bone and Slaughter House Phosphate, Grade E,	Geo. R. Hendricks, Selinsgrove,	8.40
757	Pure Bone Meal with Potash,	Geo. R. Hendricks, Selinsgrove,	4.18
	Baltimore Pulverizing Co., Baltimore, Md.		
641	Farmers' Favorite Fertilizer,	Cyrus Burkbill, Kantner,	4.54
451	H. G. Potato Guano,	F. H. Bunnell, Dimock,	7.30
450	Penniman's Special Guano No. 1,	F. H. Bunnell, Dimock,	6.71
581	Special Potato Mixture,	D. R. Wertz, Shinton,	5.47
580	Truckers' Choice,	D. R. Wertz, Shinton,	6.37

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
7.92	.77	.85	*9.54	10.00	8.69	8.00	6.74	.....	*6.74	7.00	*3.98	4.12	$37.89	$36.00	120
														25.00	389
														20.00	321
7.02	1.52	.90	*9.44	10.00	8.54	8.00	5.00	.....	5.00	5.00	*1.60	1.65	26.35	26.00	121
														26.00	678
														24.00	739
														25.00	322
6.60	2.24	1.02	*9.86	10.00	8.84	8.00	2.22	.....	2.22	2.00	*1.64	1.65	24.02	23.00	123
														24.00	630
														25.00	682
5.58	2.53	1.33	*9.44	10.00	8.11	8.00	10.90	.....	10.90	10.00	*1.52	1.65	31.57	35.00	370
														36.00	679
5.60	2.75	1.03	*9.38	10.00	8.35	8.00	4.11	.....	4.11	4.00	*.78	.82	21.96	23.00	29
														22.00	381
4.98	3.13	1.43	*9.54	10.00	8.11	8.00	1.17	.....	1.17	1.00	.51	.41	13.56	16.00	611
														20.00	320
5.27	2.63	.89	*8.79	9.00	7.90	7.00	1.33	.....	1.33	1.00	.99	.82	19.34	21.00	122
														22.00	631
4.02	3.31	4.06	*11.39	12.00	*7.33	9.00	3.55	.....	3.55	3.00	1.81	1.65	25.52	26.00	627
4.03	3.20	3.21	*10.44	11.00	*7.23	9.00	3.31	.....	3.31	3.00	*1.14	1.65	22.18	24.00	629
3.28	3.99	2.83	10.10	10.00	*7.27	8.00	2.94	.....	*2.94	3.00	1.13	.82	21.60	21.00	755
5.64	2.65	2.27	10.56	10.00	8.29	8.00	2.50	.....	*2.50	3.00	*.75	.82	20.66	19.00	756
0.00	6.83	7.59	14.42	14.00	6.83	6.00	4.07	.....	4.07	.....	2.64	.....	30.02	29.00	757
1.34	4.28	1.45	7.07	.....	5.62	3.50	1.83	.....	1.83	1.50	*.73	.82	16.17	17.87	641
1.89	5.54	2.73	10.16	.....	7.43	.....	10.40	.....	10.40	.....	1.83	.....	31.92	28.60	451
1.64	6.63	2.60	10.87	.....	8.27	8.00	1.27	.....	1.27	1.00	1.15	.82	20.59	18.60	450
1.90	4.08	1.42	7.40	.....	5.98	.....	4.52	.....	4.52	.....	1.06	.....	20.54	20.75	681
3.56	5.45	1.88	10.89	.....	9.01	.....	1.91	.....	1.91	.....	2.52	.....	27.31	23.00	580

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Baugh & Sons Co, Philadelphia, Pa.		
394	Ammoniated Soluble Alkaline,	J. U. Ruff, New Oxford,	7.89
562	Animal Compound for all Crops,	Sarah Wessinger, Watsontown,	10.25
388	†Corn Fertilizer for Sugar Corn and Garden Truck,	Sheffer & Frey, Hanover,	8.14
324		C. H. Schmucker, Freidens,	
102		P. J. Blough, Hooversville,	
395		J. U. Ruff, New Oxford,	
606		J. A. Romberger, Elizabethville,	
358	†Double Eagle Phosphate,	M. R. Thomas, Somerfield,	9.24
393		J. U. Ruff, New Oxford,	
101	†Export Bone with Potash,	P. J. Blough, Hooversville,	5.60
359		A. Gaddis & Co., Uniontown,	
103	†General Crop Grower for all Crops,	P. J. Blough, Hooversville,	10.55
318		Jacob Stattler, Elton,	
42		J. Watson Croft, Ambler,	
325		C. H. Schmucker, Freidens,	
383		D. E. Brown, East Berlin,	
608		J. A. Romberger, Elizabethville,	
89	†Potato Fertilizer,	S. N. Bailey & Bro., Dillsburg,	8.39
105		P. J. Blough, Hooversville,	
561	†Special Potato Manure,	Sarah Wessinger, Watsontown,	8.56
36		J. Watson Croft, Ambler,	
607		J. A. Romberger, Elizabethville,	
316	Special Potato Mixture,	Jacob Stattler, Elton,	9.12
317	†$25 Phosphate,	Jacob Stattler, Elton,	10.53
38		J. Watson Croft, Ambler,	
609		J. A. Romberger, Elizabethville,	
	The Berg Co., Philadelphia, Pa.		
599	$35 Potato Manure,	David W. Cooper, Sunbury,	4.76
603	$25 Special Bone Manure,	Geo. Deppen, Herndon,	5.21

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
5.92	2.49	2.59	**11.00**	.....	**8.41**	8.00	2.22	.....	**2.22**	2.00	**.59**	.41	$15.70	$16.00	334
6.07	2.70	2.67	**11.44**	.....	**8.77**	8.00	2.41	.....	**2.41**	2.00	**1.93**	1.65	26.08	.....	562
														22.00	388
														.....	324
5.13	3.20	2.31	**10.64**	.....	**8.33**	8.00	4.65	.....	**4.65**	4.00	**1.15**	.82	24.44	23.00	102
														21.00	395
														21.00	606
5.22	3.65	2.33	**11.20**	.....	**8.87**	8.00	1.28	.....	**1.28**	1.00	**1.96**	1.65	24.78	22.00	358
														23.00	393
.45	5.14	8.32	**13.91**	.....	***5.59**	11.00	2.69	.....	**2.69**	2.00	**2.03**	1.65	25.38	27.00	161
														25.00	359
														20.00	103
														20.00	318
6.25	2.75	2.42	**11.42**	.....	**9.00**	8.00	1.73	.....	**1.73**	1.00	**1.01**	.82	21.78	19.00	42
														.....	325
														20.00	383
														17.00	603
6.72	2.65	2.62	**11.99**	.....	**9.37**	3.50	2.18	.....	***2.18**	5.00	***1.68**	3.30	25.59	22.00	89
														25.00	165
														.....	561
3.64	2.49	2.19	**8.32**	.....	**6.13**	5.00	10.21	.....	**10.21**	10.00	**1.84**	1.65	30.25	30.00	36
														26.00	607
3.90	2.17	2.28	**8.35**	.....	**6.07**	5.00	10.22	.....	**10.22**	10.00	**1.85**	1.65	30.25	29.00	316
														23.50	317
5.21	3.84	2.68	**11.73**	.....	**9.05**	8.00	1.52	.....	**1.52**	1.00	**1.83**	1.65	24.97	23.00	38
														21.00	609
3.16	3.92	5.52	**12.60**	.....	**7.08**	7.00	9.46	.....	***9.46**	10.00	**2.52**	2.47	34.63	35.00	599
4.75	3.28	4.59	**12.62**	.....	**8.03**	7.00	2.63	.....	**2.63**	2.00	***1.63**	1.65	25.06	25.00	603

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	A. H. Blaker & Co. Fox Chase, Pa.		
12	Special for Potatoes,	Patterson Ramsey, Kelton,	9.67
	Bowker Fertilizer Co., Boston, Mass.		
445	Ammoniated O. I. O. Phosphate,	O. P. Beebe, Montrose,	10.32
583	Farm and Garden Phosphate,	Bailey & Blair, Wellsboro,	13.41
364	Fish Guano,	Loucks & Morrow, Scottdale,	10.20
311	Hill and Drill Phosphate,	A. Hostetler, Geistown,	10.14
310	Market Garden Fertilizer,	A. Hostetler, Geistown,	9.01
823	Potash Bone,	Amos Meyers, Sligo,	12.59
309	†Potash or Staple Phosphate,	A. Hostetler, Geistown,	12.35
824		Amos Meyers, Sligo,	
193	Potato or Staple Phosphate,	E. Cobley, Daleville,	10.84
365	6 Per Cent. Potash Fertilizer,	Loucks & Morrow, Scottdale,	8.49
308	†6 Per Cent. Potato Fertilizer,	A. Hostettler, Geistown,	12.15
587		Bailey & Blair, Wellsboro,	
306	Stockbridge Special Complete Manure,	A. Hostetler, Geistown,	9.03
467	†Sure Crop Phosphate,	P. H. Taylor, Rome,	
192		E. Cobley & Son, Daleville,	
584		Bailey & Blair, Wellsboro,	
830		James McGuire, Knox,	
	Cambria Fertilizer Co., Johnstown, Pa.		
697	Corn and Potato Manure,	H. A. Shoemaker, Ebensburg,	6.11
664	†Standard Phosphate,	Herman Neafer, Altoona,	6.45
116		M. A. Zimmerman, Critchfield,	
696		H. A. Shoemaker, Ebensburg,	
	The Chicago Fertilizer Co., Chicago, Ill.		
792	Blood, Bone and Potash,	L. B. Gilmore, Wesley,	8.60
	Henry Cope & Co., Lincoln University, Pa.		
35	Ammoniated Bone Phosphate,	Passmore & Gillespie, Nottingham,	9.55
34	Potato and Corn Phosphate,	Passmore & Gillespie, Nottingham,	12.59
296	Pure Bone Phosphate,	Henry Cope & Co., Oxford,	9.11

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
4.55	3.45	1.85	**9.83**	.....	**7.98**	8.00	8.28	.....	**8.28**	8.00	**1.12**	1.03	$27.31	$25.00	12
4.33	5.63	4.35	**14.31**	11.00	***9.96**	10.00	.42	.....	**.42**	.....	**.84**	.50	16.24	17.00	445
4.84	3.28	3.52	**11.64**	9.00	**8.12**	8.00	2.11	.....	**2.11**	2.00	**1.60**	1.50	23.95	30.00	583
3.73	4.65	5.00	**13.38**	.....	**8.38**	.....	4.26	.....	**4.26**	.....	**.86**	.....	24.03	28.00	364
4.71	6.02	2.83	**13.56**	10.00	**10.73**	9.00	2.12	.....	**2.12**	2.00	**2.39**	2.25	29.54	25.00	311
2.08	4.90	2.88	**9.86**	7.00	**6.98**	6.00	8.58	.....	***8.58**	10.00	**2.33**	2.25	31.66	30.00	310
3.69	3.40	1.81	**8.90**	7.00	**7.09**	6.00	2.00	.....	**2.00**	2.00	**.95**	.75	19.18	23.00	823
3.84	3.97	3.07	**10.88**	9.00	***7.81**	8.00	3.15	.....	**3.15**	3.00	**.90**	.75	21.58	19.00 26.00	309 824
3.16	4.15	2.51	**9.82**	9.00	***7.31**	8.00	2.99	.....	***2.99**	3.00	**.88**	.75	20.49	22.50	193
.90	4.82	3.82	**9.54**	7.00	***5.72**	6.00	7.61	.....	**7.61**	6.00	**1.07**	.75	24.46	30.00	365
4.66	3.49	2.32	**10.47**	7.00	**8.15**	6.00	5.34	.....	***5.34**	6.00	**.88**	.75	23.89	24.00 30.00	308 587
3.83	2.77	3.52	**10.12**	.....	**6.60**	.....	10.52	.....	**10.52**	.....	**3.36**	.....	37.66	35.00	306
4.70	3.44	3.19	**11.33**	10.00	***8.14**	9.00	2.47	.....	**2.47**	2.00	**.91**	.75	21.37	23.00 19.80 25.00 25.00	467 192 584 830
5.63	2.55	2.00	**10.18**	7.00	**8.18**	6.00	5.47	3.38	**8.85**	8.00	**1.82**	1.50	31.66	32.00	697
4.44	3.21	2.23	**9.88**	7.00	**7.65**	6.00	4.44	.....	**4.44**	3.00	**1.73**	1.50	25.75	26.00 25.00 25.00	664 116 696
4.06	4.77	1.32	**10.15**	9.00	**8.83**	8.00	1.99	.....	***1.99**	2.00	**1.31**	1.24	22.26	28.00	792
2.16	5.69	2.52	***10.37**	11.00	***7.85**	9.00	2.73	.....	**2.73**	2.00	**.92**	.82	20.71	21.00	35
3.74	4.27	.93	***8.94**	9.00	**8.01**	8.00	4.26	.....	**4.26**	4.00	**1.29**	1.24	23.43	24.00	34
3.25	5.34	4.46	**13.05**	9.00	**8.59**	8.00	2.46	.....	**2.46**	2.00	**2.23**	1.65	27.63	.....	236

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Josiah Cope & Co., Lincoln University, Pa.		
293	Ammoniated Bone Phosphate,	Josiah Cope & Co., Oxford,	9.00
289	Pure Bone Phosphate,	Josiah Cope & Co., Oxford,	6.97
292	"Try Me" Bone Phosphate,	Josiah Cope & Co., Oxford,	10.17
294	Wheat and Grass Special,	Josiah Cope & Co., Oxford,	12.83
	E. Daron, Dover, Pa.		
418	Harvest King Bone Phosphate,	E. Daron, Dover,	12.15
	Jas. G. Downward & Co., Coatesville, Pa.		
43	Ammoniated Bone Phosphate,	Geo. W. Niblock, Ambler,	8.52
45	Royal Bone Phosphate,	Geo. W. Niblock, Ambler,	9.66
48	Special Asparagus Mixture,	Geo. W. Niblock, Ambler,	7.60
46	Special Corn Manure,	Geo. W. Niblock, Ambler,	6.45
44	Special Potato Fertilizer,	Geo. W. Niblock, Ambler,	10.45
47	Special Wheat and Grass Fertilizer,	Geo. W. Niblock, Ambler,	6.77
	Eureka Fertilizer Co., Perryville, Md.		
368	†Corn and Potato Special,	C. S. Funk, New Stanton,	9.28
285		Lewis H. Kirk & Co., Nottingham,	
410		F. H. Shenberger, Brownton,	
525		Dimm & Kiser, Thompsontown,	
286	Fish, Rock and Potash,	Lewis H. Kirk & Co., Nottingham,	8.95
408	Imperial Bone Phosphate,	F. H. Shenberger, Brownton,	9.08
287	†Potato and Vegetable Fertilizer,	Lewis H. Kirk & Co., Nottingham,	7.71
407		F. H. Shenberger, Brownton,	
	Washington Ewing, Landenberg, Pa.		
24	Eclipse Raw Bone Super Phosphate,	Passmore & Gillespie, Nottingham,	8.49
23	Waste Land Potato Phosphate,	Passmore & Gillespie, Nottingham,	8.89
	Griffith & Boyd, Baltimore, Md.		
21	†Ammoniated Bone Phosphate,	F. A. Hamilton, Sylmar,	11.33
166		Adam Krug, Allenwood,	
146	Cereal Bone Plant Food,	Jacob Hummel, Red Top,	12.31

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
7.66	3.52	.91	**12.09**	11.00	**11.18**	10.00	3.52	.....	**3.52**	3.00	**.87**	.82	$24.80	$20.00	293
3.83	4.57	5.68	**14.08**	12.00	**8.40**	8.00	4.31	.....	**4.31**	3.00	**2.17**	1.65	29.59	27.00	289
7.45	2.75	2.04	**12.24**	12.00	**10.20**	10.00	4.78	.....	**4.78**	4.00	**2.36**	1.65	31.51	23.00	292
1.66	7.59	.59	**9.84**	9.00	**9.25**	8.00	1.19	.....	**1.19**	1.00	**1.01**	.82	20.06	17.00	294
5.66	3.01	.61	***9.28**	10.00	**8.67**	8.00	5.35	.....	**5.35**	5.00	***1.47**	1.65	25.98	22.00	418
2.85	4.50	2.29	**9.64**	9.00	***7.35**	8.00	2.71	.....	**2.71**	2.50	**1.33**	1.24	21.90	25.00	43
4.48	2.90	2.65	**10.03**	9.00	***7.38**	8.00	2.74	.....	**2.74**	2.00	**.86**	.82	20.38	22.00	45
2.38	2.10	1.29	**5.77**	5.00	**4.48**	3.00	5.65	.....	**5.65**	5.00	***5.91**	8.24	39.24	40.00	48
4.12	4.05	2.72	***10.89**	11.00	***8.17**	9.00	3.27	.....	***3.27**	3.50	**1.69**	1.65	25.10	30.00	46
3.89	3.69	2.19	**9.77**	9.00	***7.58**	8.00	4.45	.....	**4.45**	4.00	**1.69**	1.65	25.38	28.00	44
3.73	4.24	2.78	**10.75**	9.00	***7.97**	8.00	3.04	.....	**3.04**	3.00	***1.63**	1.65	24.46	30.00	47
														22.00	368
														21.00	285
5.69	3.81	4.71	**14.21**	11.00	**9.50**	9.00	2.12	.....	***2.12**	3.00	**.82**	.82	17.79	21.00	410
														20.00	525
5.37	3.83	4.01	**13.21**	9.00	**9.20**	8.00	.85	.....	***.85**	1.00	**.60**	.41	15.25	16.50	286
5.36	4.28	6.23	**15.87**	9.00	**9.64**	8.00	1.10	.....	**1.10**	1.00	***.73**	.82	17.17	18.00	468
5.64	3.85	4.48	**13.97**	10.00	**9.49**	8.00	1.53	.....	***1.53**	4.00	***1.43**	1.65	24.81	22.00	287
														21.00	407
4.24	4.93	4.33	**13.50**	9.00	**9.17**	7.00	2.76	.....	**2.76**	2.00	***1.11**	1.24	24.08	24.00	24
4.34	4.53	4.75	**13.62**	5.00	**8.87**	3.00	2.36	.....	***2.36**	3.00	**1.14**	.82	23.72	24.00	23
5.75	2.37	2.66	**10.78**	9.00	**8.12**	8.00	2.91	.....	**2.91**	2.00	**1.65**	1.65	24.67	20.00	21
														22.00	166
5.91	3.16	2.03	**11.10**	9.00	**9.07**	8.00	2.73	.....	**2.73**	2.00	***.79**	.82	21.85	19.50	146

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
71	†Farmers' Potato Manure,	E. J. Myers, York Springs,	10.78
22		F. A. Hamilton, Sylmar,	
528		Wm. Kipp, Millerstown,	
656	Fish, Bone and Potash,	W. H. Heckert, Bakerstown,	10.33
147	†Peerless Fertilizer,	Jacob Hummel, Red Top,	13.24
70		E. J. Myers, York Springs,	
303		J. M. Harshberger, Johnstown,	
657		W. H. Heckert, Bakerstown,	
655	Royal Potash Guano,	W. H. Heckert, Bakerstown,	10.43
333	†Spring Crop Grower,	Jas. D. Miller, Rockwood,	10.86
302		J. M. Harshberger & Sons, Johnstown,	
658		W. H. Heckert, Bakerstown,	
149	†Valley Fertilizer,	Jacob Hummel, Red Top,	14.03
72		E. J. Myers, York Springs,	
301		J. M. Harshberger & Sons, Johnstown,	
	Hanover Fertilizer Co., Baltimore, Md.		
237	†Farmers' Crop Winner,	Isenberg Milling Co., Huntingdon,	7.82
386		H. F. Stambaugh, Abbottstown,	
114	Klondyke Special,	Josiah Specht, Kantner,	10.31
230	†Klondyke Special for Potatoes and Tobacco,	E. M. Soope, Petersburg,	8.50
385		H. F. Stambaugh, Abbottstown,	
	Frank Hartranft, Coatesville, Pa.		
265	Ammoniated Bone Phosphate,	Jos. Worrall, Parkesburg,	9.15
263	Special Phosphate,	Jos. Worrall, Parkesburg,	8.05
	W. S. Hastings & Son, Atglen, Pa.		
256	Soluble Bone and Potash,	W. S. Hastings & Son, Atglen,	14.43
	S. M. Hess & Bro., Philadelphia, Pa.		
815	No. 2 Keystone Bone,	J. N. Williamson, Harrisville,	6.65
509	Potato and Truck Manure,	John Brown, Mantz,	8.80
417	The Scientific Manure,	Daniel Spangler, Red Lion,	8.97

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.				
			Total.		Available				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
														$25.00	71
6.32	2.40	1.76	**10.48**	9.50	**8.72**	8.00	9.25	.....	**9.25**	9.00	*.73	.82	$27.86	23.75	22
														24.00	528
4.18	2.83	2.31	**9.32**	8.00	**7.01**	7.00	3.05	.....	**3.05**	3.00	**1.75**	1.44	23.61	21.00	656
														16.50	117
4.15	4.43	2.49	**11.07**	.....	**8.58**	8.00	2.59	.....	**2.59**	2.00	**.34**	.29	14.97	15.00	70
														18.00	203
														16.00	657
4.56	3.62	2.60	**10.78**	9.00	**8.18**	8.00	4.18	.....	**4.18**	4.00	**.87**	.82	22.71	22.00	655
														.....	333
5.10	2.92	2.18	**10.20**	7.50	**8.02**	6.50	4.59	.....	**4.59**	4.50	***1.63**	1.65	25.94	27.00	302
														23.00	658
														18.50	149
6.51	2.57	1.70	**10.78**	9.00	**9.08**	8.00	3.21	.....	**3.21**	3.00	**.53**	.41	16.70	18.00	72
														24.00	301
														19.00	237
1.99	5.34	1.91	**9.24**	8.00	**7.33**	7.00	2.51	.....	**2.51**	1.50	**.41**	.41	13.88	17.00	386
3.37	3.68	2.13	**9.18**	9.00	***7.05**	8.00	4.76	.....	**4.76**	4.00	***1.61**	1.65	24.63	25.00	114
														24.00	230
3.22	4.08	2.13	**9.43**	9.00	***7.30**	8.00	4.65	.....	**4.65**	4.00	***1.63**	1.65	24.98	23.00	885
3.82	5.00	7.97	**16.79**	15.00	***8.82**	10.00	1.97	.....	**1.97**	1.50	***1.42**	2.06	25.77	25.00	265
4.95	6.93	5.25	**17.13**	15.00	***11.88**	14.00	1.73	.....	***1.73**	2.50	*.56	.82	18.01	22.00	263
7.15	2.08	2.82	**12.05**	.....	***9.23**	10.00	2.17	.....	**2.17**	2.00	**.72**	.....	16.78	14.00	256
5.33	4.09	1.92	**11.34**	10.00	**9.42**	8.00	1.56	.....	**1.56**	1.00	**1.02**	.82	21.70	23.00	815
7.12	2.26	1.79	**11.17**	10.00	**9.38**	8.00	6.48	.....	**6.48**	6.00	**2.50**	2.47	32.76	30.00	509
2.41	4.16	1.40	**7.97**	7.00	**6.57**	6.00	4.92	.....	***4.92**	5.00	**1.49**	1.24	23.38	27.50	417

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
416	†Special Compound,	Daniel Spangler, Red Lion,	8.43
513		Faust & Imboden, Orwigsburg,	
508	†Special Corn Manure,	John Brown, Mantz,	8.78
514		Faust & Imboden, Orwigsburg,	
	Hubbard Fertilizer Co., Baltimore, Md.		
569	Royal Ensign for Early Market Vegetables,	S. G. Updegroff, Williamsport,	8.80
570	Truckers' 7 Per Cent. Royal Seal Compound,	S. G. Updegroff, Williamsport,	12.88
	M. P. Hubbard & Co., Baltimore, Md.		
207	Bermuda 7 Per Cent. Guano,	Richard Graves, Tompkinsville,	8.18
502	Celebrated Bone Phosphate,	Chas. Andrews, Sitlers,	11.08
63	†Excelsior Bone Phosphate,	Geo. Arnold, York county,	12.62
751		R. F. Schwarz, Analomink,	
206	Farmers' Acme Fertilizer,	Richard Graves, Tompkinsville,	8.55
501	†Farmers' Old Economy Phosphate,	Charles Andrews, Sitlers,	11.56
352		Kregar & Son, Kingwood,	
49		E. A. Keasey, Diilsburg,	
531		Wm. Lindsey, Millerstown,	
750		R. F. Schwarz, Analomink,	
210	Pennsylvania Special Potato Grower,	Richard Graves, Tompkinsville,	9.00
	Jarecki Chemical Co., Sandusky, O.		
652	†Fish and Potash Potato and Tobacco Food,	S. J. Saint, Sharpsburg,	.....
99		Wm. J. Horner, Quemahoning,	11.95
780		J. K. Hagerty, East Sandy,	
782	†Lake Erie Fish Guano,	J. K. Hagerty, East Sandy,	12.79
98		Wm. J. Horner, Quemahoning,	
787		G. A. Blair, Wesley,	.....
779	†O. K. Fertilizer,	J. K. Hagerty, East Sandy,	5.20
97		Wm. J. Horner, Quemahoning,	
807		Sprowell Bros., Boyers,	
	T. S. Kenderdine & Sons, Newtown, Pa.		
270	Kenderdine's Ammoniated Phosphate,	T. S. Kenderdine & Sons, Newtown,	7.52

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
6.02	2.88	1.42	**10.32**	10.00	**8.90**	8.00	4.43	.....	**4.43**	4.00	**.95**	.82	$23.71	$25.00	416
														24.00	513
6.49	2.62	2.09	**11.20**	10.00	**9.11**	8.00	3.04	.....	**3.04**	2.00	**1.01**	.82	23.08	20.00	508
														23.00	514
6.35	1.58	3.13	**11.06**	.....	***7.93**	8.00	4.28	.....	**4.28**	5.00	***2.19**	2.47	28.34	26.00	569
9.46	2.13	1.02	**12.61**	7.00	**11.59**	6.00	2.34	.....	***2.34**	5.00	***1.83**	5.77	28.28	35.00	570
5.97	2.07	.85	**8.89**	8.50	**8.04**	7.00	4.86	.....	**4.86**	4.00	***5.43**	5.77	40.76	33.00	207
6.76	2.95	1.38	**11.09**	.....	**9.71**	9.00	2.54	.....	**2.54**	2.00	***1.59**	1.65	25.30	20.00	502
6.58	3.74	.91	**11.23**	9.50	**10.32**	8.00	1.66	.....	**1.66**	1.50	**.86**	.82	21.86	20.00	63
														22.00	751
6.19	2.64	1.49	**10.32**	.....	**8.83**	7.00	2.52	.....	**2.52**	2.00	***1.47**	1.65	23.71	22.00	206
														15.00	501
														16.50	352
6.60	3.42	.93	**10.95**	.....	**10.02**	8.00	1.94	.....	**1.94**	1.50	**.76**	.41	21.42	17.50	49
														.....	531
														21.00	750
5.54	2.02	1.23	**8.79**	.....	**7.56**	6.00	5.60	.....	**5.60**	5.00	***.64**	1.24	22.11	22.00	210
														24.00	652
7.15	3.32	1.66	**12.13**	9.00	**10.47**	8.00	1.60	1.96	***3.56**	4.00	**.88**	.82	24.93	24.00	99
														30.00	780
														.....	782
6.65	4.44	1.78	**12.87**	11.00	**11.09**	10.00	1.11	.....	**1.11**	1.00	**1.70**	1.65	25.89	23.50	98
														28.00	787
														19.00	779
2.44	3.73	1.52	**7.69**	7.00	**6.17**	6.00	.....	.60	**.60**	.50	**.52**	.41	14.82	14.00	97
														20.00	807
6.15	4.91	1.29	**12.35**	12.00	**11.06**	11.00	2.44	.....	**2.44**	2.00	**1.50**	1.24	26.13	24.00	270

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
269	Kenderdine's Bone Phosphate,	T. S. Kenderdine & Sons, Newtown,	8.19
263	Kenderdine's Potato Phosphate,	T. S. Kenderdine & Sons, Newtown,	10.25
	Lackawanna Fert. & Chem. Co., Moosic, Pa.		
196	†Big Yield,	R. J. Tanfield, Daleville,	6.85
773		Miles Mattern, Scotia,	
201	†Bone Super Phosphate,	R. J. Tanfield, Daleville,	8.75
138		Geo. M. Walter, Milton,	
556		S. W. Lyons & Son, Canton,	
775	†Kali Chief,	Miles Mattern, Scotia,	7.44
200		R. J. Tanfield, Daleville,	
772		Miles Mattern, Scotia,	
429	†Our Admiral,	Henry G. Stamm, Leesport,	7.19
194		R. J. Tanfield, Daleville,	
552		S. W. Lyons & Son, Canton,	
555	†Special Manure,	S. W. Lyons & Son, Canton,	8.54
218		John Eaves, Stormstown,	
774		Miles Mattern, Scotia,	
195	†Wyoming Guano,	R. J Tanfield, Daleville,	7.67
139		Geo. M. Walter, Milton,	
582		Wm. Norman, Sebrings,	
	B. F. Lebernight, Red Lion, Pa.		
411	Standard Ammoniated Bone Phosphate,	Lebernight & Ferree, Red Lion,	11.79
	Lister's Agri. Chem. Works, Newark, N. J.		
379	†Corn and Potato Fertilizer,	D. A. Urich, Mechanicsburg,	9.37
31		Passmore & Gillespie, Nottingham,	
594		H. G. Supplee, Bloomsburg,	
661		P. C. Steiner, Bakerstown,	
180	"G." Brand,	John E. Sheeler, Geigertown,	11.12
232	†Harvest Queen,	J. H. Oaks, Petersburg,	10.22
32		Passmore & Gillespie, Nottingham,	
390		J. N. Hersh, New Oxford,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
6.49	4.11	1.33	**11.93**	11.00	**10.60**	9.00	4.98	.....	*4.98	5.00	**2.64**	2.47	$32.88	$30.00	269
6.23	3.28	1.10	**10.61**	9.00	**9.51**	8.00	8.79	.....	*8.79	10.00	*1.52	1.65	30.86	30.00	268
5.68	1.46	1.65	**8.79**	8.00	**7.14**	6.00	4.82	.....	*4.82	5.00	*1.89	2.06	26.02	27.00	196
														29.00	773
5.31	2.91	3.93	**12.21**	12.00	*8.22	10.00	2.23	.....	**2.23**	2.00	**1.83**	1.65	25.44	25.00	201
														23.00	138
														25.00	556
														25.50	775
5.88	2.05	.98	*8.91	9.00	**7.93**	7.00	7.53	.....	*7.53	8.00	**.88**	.82	25.42	27.00	200
														29.00	772
														18.00	429
3.38	3.39	1.24	**8.01**	7.00	**6.77**	6.00	1.16	.....	**1.16**	1.00	**.92**	.82	17.43	18.00	194
														23.00	552
														35.00	555
8.80	1.71	.94	**11.45**	12.00	**10.51**	10.00	6.52	.....	**6.52**	6.50	**2.60**	2.47	34.18	38.00	218
														33.00	774
														22.00	195
4.87	2.58	1.07	*8.52	9.00	**7.45**	7.00	3.58	.....	*3.58	4.00	**1.08**	.82	21.56	23.00	139
														22.00	582
7.35	2.94	.94	*11.13	11.50	**10.29**	9.25	2.04	.....	**2.04**	1.85	**1.44**	.82	24.66	20.00	411
														25.00	379
5.24	3.50	2.30	**11.04**	9.00	**8.74**	8.00	3.18	.....	**3.18**	3.00	**1.76**	1.65	25.78	24.00	31
														27.00	594
														23.00	661
7.99	1.18	1.16	**10.33**	10.00	**9.17**	8.00	4.60	.....	**4.60**	4.00	**1.03**	.82	24.70	20.00	180
														.....	232
8.31	2.05	1.96	**12.32**	11.00	**10.36**	9.00	.93	1.24	**2.17**	2.00	**1.38**	1.24	25.47	23.00	32
														23.50	390

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
727	Special Crop Producer,	Frank Douglass, Indiana,	8.17
389	Special Potato Fertilizer,	J. N. Hersh, New Oxford,	8.43
178	Special 10 Per Cent. Potato,	John E. Sheeler, Geigertown,	10.15
406	Standard Pure Bone Super Phosphate of Lime,	G. B. Murphy, Keys,	8.28
662	Success Fertilizer,	P. C. Steiner, Bakertown,	11.69
183	3—6—10 for Potatoes,	John E. Sheeler, Geigertown,	10.21
	Mapes Formula & Peruvian Guano Co., N. Y.		
182	Cauliflower and Cabbage Manure,	E. M. Zerr, Geigertown,	7.54
457	†Corn Manure,	Stewart Riley, Springville,	7.74
731	†Corn Manure,	A. F. Kimmel, Orwigsburg,	7.74
622	†Economical Potato Manure,	J. L. Nisley, Middletown,	7.42
732	†Economical Potato Manure,	A. F. Kimmel, Orwigsburg,	7.42
735	Fruit and Vine Manure,	A. F. Kimmel, Orwigsburg,	8.69
244	†General Crop Brand,	Jones & Paxson, Hatboro,	9.77
135	†General Crop Brand,	Abram Fairchild, Montandon,	9.77
621	†General Crop Brand,	J. L. Nisley, Middletown,	9.77
730	†General Crop Brand,	A. F. Kimmel, Orwigsburg,	9.77
136	Grain Brand,	Abram Fairchild, Montandon,	6.56
181	†Potato Manure,	E. M. Zerr, Geigertown,	9.24
132	†Potato Manure,	Frank B. Rine, Lewisburg,	9.24
620	†Potato Manure,	J. L. Nisley, Middletown,	9.24
729	Root and Fruit Brand,	A. F. Kimmel, Orwigsburg,	7.86
134	†Top Dresser Improved,	Frank B. Rine, Lewisburg,	6.82
728	†Top Dresser Improved,	A. F. Kimmel, Orwigsburg,	6.82
133	†Vegetable Manure or Complete Manure for Light Soils,	Frank B. Rine, Lewisburg,	6.38
623	†Vegetable Manure or Complete Manure for Light Soils,	J. L. Nisley, Middletown,	6.38
	Miller Fertilizer Co., Baltimore, Md.		
388	Special Potato Fertilizer,	M. T. Harkins, Oxford,	6.06
	Nassau Fertilizer Co., New York.		
428	Common Sense Fertilizer,	P. S. Shoppel, Mohrsville,	10.61

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
6.65	2.13	2.35	**11.13**	9.00	**8.78**	8.00	.....	1.37	**1.37**	1.00	**.95**	.82	$21.22	$20.00	727
4.28	4.01	3.68	**11.97**	.....	**8.29**	.....	3.24	.....	**3.24**	.....	**1.60**	.....	25.28	25.00	389
7.35	1.69	2.28	**11.32**	9.00	**9.04**	8.00	9.70	.....	***9.70**	10.00	**1.72**	1.65	32.77	27.00	178
8.05	2.41	1.95	**12.41**	11.00	**10.46**	9.00	1.73	.56	**2.29**	2.00	**2.57**	2.47	30.14	22.00	406
8.85	1.78	1.61	**12.24**	11.00	**10.63**	9.00	1.60	.49	**2.09**	2.00	**1.45**	1.24	25.71	22.00	662
7.70	1.61	1.95	**11.26**	.....	**9.31**	6.00	5.07	1.04	***6.11**	10.00	***2.41**	2.47	32.22	28.00	183
1.89	3.75	2.79	**8.43**	7.00	***5.64**	6.00	7.65	.....	**7.65**	6.00	**4.33**	4.12	37.11	39.00	182
1.54	5.31	4.60	**11.45**	10.00	***6.85**	8.00	6.40	.....	**6.40**	6.00	**2.57**	2.47	30.82	36.00	457
														36.00	731
2.02	3.03	2.69	**7.74**	6.00	**5.05**	4.00	8.21	.....	**8.21**	8.00	**3.60**	3.30	34.02	37.00	622
														36.00	732
2.55	3.48	2.17	**8.20**	7.00	**6.03**	5.00	1.73	10.12	**11.85**	10.00	**1.97**	1.65	33.91	39.00	735
														24.00	244
2.55	5.54	3.36	**11.45**	10.00	**8.09**	8.00	2.43	.....	**2.43**	2.00	**1.70**	1.65	24.30	27.00	135
														27.00	621
														26.00	730
3.64	3.91	2.58	**10.13**	.....	***7.55**	8.00	4.36	.....	**4.36**	4.00	**1.01**	.82	22.64	27.00	136
														40.00	181
3.09	4.39	2.81	**10.29**	8.00	**7.48**	6.00	1.20	6.19	**7.39**	6.00	**4.06**	3.71	38.92	45.00	132
														40.00	629
3.74	4.50	2.62	**10.86**	.....	**8.24**	.....	8.39	.....	**8.39**	.....	**1.06**	.....	27.74	31.00	720
.92	1.91	1.52	**4.35**	4.00	***2.83**	3.00	.67	1.58	**2.25**	2.00	***4.15**	4.94	27.33	32.00	124
														31.00	728
2.29	3.68	3.70	**9.67**	8.00	***5.97**	6.00	1.20	6.64	**7.84**	6.00	**5.53**	4.94	44.07	45.00	133
														42.00	623
2.40	4.23	2.61	**9.24**	8.50	***6.63**	7.00	4.52	.....	***4.52**	5.00	**1.19**	.82	22.47	23.00	288
4.84	3.29	2.29	**10.42**	9.00	**8.13**	8.00	5.18	.....	**5.18**	4.00	**1.87**	1.65	27.50	21.00	428

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	New Jersey Agri. Chem. Co., Newark, N. J.		
491	Russell's Harvest Queen Phos. For Vegetables and Cereals,	M. C. Dietrich, Kempton,	9.24
441	Russell's Spc'l Corn Manure, Corn & Similar Crops,	M. C. Dietrich, Kempton,	9.83
442	Russell's Special Potato Fertilizer, Potatoes and Garden Truck,	M. C. Dietrich, Kempton,	9.36
	Wm. C. Newport & Co., Philadelphia, Pa.		
92	†Fish, Bone and Potash,	Cook, Deardorff & Co., Dillsburg,	10.93
614		Kopenhaver & Hoy, Millersburg,	
267	†Gilt Edge Potato and Tobacco Manure,	H. C. Worstall, Newtown,	11.18
185		J. R. Laugner, White Bear,	
159		John Penny, Dry Valley X Roads,	
550		Ogden & Allen, Canton,	
615		Kopenhaver & Hoy, Millersburg,	
668		H. L. Stultz, Duncansville,	
220	†Grain and Grass Special,	John I. Gray, Stormstown,	11.26
187		Geo. Raubenhold, Hamburg,	
154		John Penny, Dry Valley X Roads,	
94		Cook, Deardorff & Co., Dillsburg,	
479		Willis Mosier, Dushore,	
530		A. H. Ulsh, Millerstown,	
740		Frank Koenig, Orwigsburg,	
243	†Potato, Tobacco and Truck Guano,	Jones & Paxson, Hatboro,	9.21
186		J. R. Laugner, White Bear,	
155		John Penny, Dry Valley X Roads,	
93		Cook, Deardorff & Co., Dillsburg,	
480		Willis Mosier, Dushore,	
549		Ogden & Allen, Canton,	
672		H. L. Stultz, Duncansville,	
739		Frank Koenig, Orwigsburg,	
245	†Rectified Phosphate,	Jones & Paxson, Hatboro,	10.71
669		H. L. Stultz, Duncanville,	

†Composite sample,

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
3.90	4.40	7.07	**15.37**	11.00	***8.30**	9.00	2.32	.....	**2.32**	1.50	***.59**	1.81	$17.12	$23.00	491
3.53	4.96	6.12	**14.61**	9.00	**8.49**	8.00	2.76	.....	***2.76**	3.00	***.85**	1.65	18.31	26.00	441
3.45	4.98	6.29	**14.72**	.....	**8.43**	.....	3.40	.....	**3.40**	.....	**.73**	.....	18.57	26.00	442
6.08	2.06	3.10	**11.24**	8.00	**8.14**	7.00	5.96	.....	**5.96**	5.00	**1.66**	1.65	28.04	22.50	92
														22.00	614
5.22	2.32	1.75	**9.29**	9.00	***7.54**	8.00	9.13	.....	***9.13**	10.00	***1.57**	1.65	29.50	30.00	267
														28.00	185
														27.00	159
														35.00	550
														25.00	615
														30.00	668
3.67	4.94	1.99	**10.60**	9.00	**8.61**	8.00	1.90	.....	***1.90**	2.00	**.57**	.41	14.85	19.50	220
														15.00	187
														16.00	154
														16.25	94
														19.00	479
														17.00	530
														20.50	740
3.56	3.07	1.41	**8.04**	7.00	**6.63**	6.00	6.54	.....	**6.54**	6.00	***.81**	.82	22.53	23.00	243
														23.00	186
														20.00	155
														24.00	93
														24.00	480
														25.00	549
														25.00	672
														25.00	739
4.77	1.95	1.24	***7.96**	8.00	***6.72**	7.00	5.16	.....	**5.16**	5.00	**3.53**	3.30	32.13	31.00	245
														30.00	669

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
221	†Special Compound,	John I. Gray, Stormstown,	14.70
157		John Penny, Dry Valley X Roads,	
551		Ogden & Allen, Canton,	
560	Trucker's Joy,	Ogden & Allen, Canton,	12.88
	G. Ober & Sons, Baltimore, Md.		
396	Farmers' Mixture,	G. W. Altland, Mt. Top,	7.79
	Osceola Fertilizer Co., Osceola Mills, Pa.		
720	Ideal Mixture,	J. P. Staver, Clearfield,	4.23
	Patapsco Guano Co., Baltimore, Md.		
346	†Corn Brand Guano,	C. B. Moore, N. Lexington,	9.71
164		P. A. Baker, Vicksburg,	
522		Philip Hailey, East Salem,	
597		W. F. Slagle, Bloomsburg,	
161	Patapsco Corn and Tomato Fertilizer,	P. A. Baker, Vicksburg,	11.40
137	Patapsco Early Trucker,	Jacob Moser, Pottsgrove,	8.30
160	Patapsco Early Trucker for Quick Growth,	P. A. Baker, Vicksburg,	8.67
163	†Patapsco Sea Gull Guano,	P. A. Baker, Vicksburg,	7.50
400		Jonathan Geesey, Dallastown,	
162	Patapsco Tobacco and Potato Fertilizer,	P. A. Baker, Vicksburg,	9.46
	Pa. Amm. & Fert. Works, Harrisburg, Pa.		
375	†Capital Bone Super Phosphate,	J. H. Urich, Mechanicsburg,	6.82
534		W. F. Barnett, New Bloomfield,	
184	Dauphin Brand,	Geo. M. Dosch, White Bear,	9.23
	Piedmont-Mt. Airy Guano Co., Balto., Md.		
234	Piedmont Penna. Potato Grower,	John G. Simpson, Huntingdon,	5.44
	Pittsburg Provision Co., Pittsburg, Pa.		
638	Corn and Potato Fertilizer,	J. H. Miller, Ligonier,	2.34
635	Keystone Fertiiizer,	J. H. Miller, Ligonier,	2.23
	R. H. Pollock, Baltimore, Md.		
415	†Ammoniated Bone Phosphate,	Elias Goble, Red Lion,	10.39
377		E. W. Rupp, Shiremanstown,	
624		J. L. Nisley, Middletown,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
														$21.00	221
5.99	2.83	2.09	*10.91	11.00	*8.82	10.00	2.28	.....	2.28	2.00	1.07	1.03	$22.15	18.00	157
														22.00	551
4.83	1.20	2.79	*8.82	9.00	*6.03	8.00	4.63	.....	*4.63	6.00	*3.58	4.12	31.80	35.00	560
7.38	2.37	2.51	12.26	11.00	9.75	9.00	2.55	.....	2.55	2.00	1.19	.82	24.38	18.00	396
.71	3.57	9.29	13.57	5.00	4.28	4.00	2.84	.....	*2.84	3.00	2.19	1.65	25.16	24.00	720
														19.50	346
														20.00	164
6.91	2.79	.66	10.36	10.00	9.70	9.00	3.20	.....	3.20	3.00	*.79	.82	22.45	19.00	522
														20.00	597
6.65	3.42	1.01	11.08	11.00	10.07	9.00	2.51	.....	2.51	2.00	1.64	1.24	25.69	22.00	161
5.51	2.30	1.75	9.56	8.00	7.81	7.00	6.25	.....	6.25	5.00	*3.94	4.12	36.34	30.00	137
5.95	2.21	1.73	9.89	8.00	8.16	7.00	6.00	.....	6.00	5.00	*3.57	4.12	34.94	32.00	160
														19.00	163
3.93	4.73	.98	9.64	9.00	8.66	8.00	1.37	.....	1.37	1.00	.94	.82	19.88	18.00	400
5.96	2.72	1.54	10.22	9.00	8.68	8.00	4.36	.....	4.36	4.00	1.99	1.65	27.56	24.00	162
6.81	4.26	1.85	12.92	11.00	11.07	9.00	3.68	.....	3.68	2.00	2.65	2.47	32.32	30.00	375
														.....	534
4.11	6.22	4.09	14.42	12.00	10.33	10.00	2.32	.....	2.32	2.00	*1.19	1.24	25.09	24.00	184
1.79	2.24	6.80	10.83	.....	*4.03	6.00	8.51	.....	*8.51	10.00	1.77	1.65	27.87	30.00	234
.82	3.46	5.66	*9.94	11.00	*4.28	9.00	.....	2.53	*2.53	3.00	*1.56	1.65	21.07	25.00	638
1.39	4.10	5.98	11.47	11.00	*5.49	9.00	.40	1.45	1.85	1.50	1.80	1.65	22.64	21.00	635
														24.00	415
3.11	4.66	2.73	10.30	9.00	*7.77	8.00	2.17	.....	2.17	2.00	1.67	1.65	23.20	21.00	377
														24.00	624

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.	Moisture in 100 pounds.
677	†Special Potato and Tobacco Fertilizer,	A. M. McClure, Everett,	7.80
376		E. W. Rupp, Shiremanstown,	
277		John G. Dubbs, Bellefonte,	
692		J. A. C. Rider, Tyrone,	
749		Jerome S. Williams, Stroudsburg,	
518	†Superior Corn and Tomato Fertilizer,	H. M. Owens, Lewistown,	9.25
228		John G. Dubbs, Bellefonte,	
88		F. F. Weigard, York county,	
691		J. A. C. Rider, Tyrone,	
747		Jerome S. Williams, Stroudsburg,	
	Pugh & Sons, Oxford, Pa.		
297	Bone Phosphate,	S. R. Dickey & Co., Oxford,	8.60
	Rasin-Monumental Co., Baltimore, Md.		
401	Ammoniated Alkaline Phosphate,	G. B. Murphy, Keys,	9.64
323	Ammoniated Super Phosphate,	Barron Bros., Rockwood,	10.02
605	IXL Celebrated Universal Fertilizer,	Wm. H. Harter, Hartleton,	11.33
402	†IXL Fertilizer,	G. B. Murphy, Keys,	11.47
706		J. J. Hank, Carroltown,	
	Reading Chem. & Fert. Co., Reading, Pa.		
493	Potato and Vegetable Fertilizer,	Wm. F. Snyder, Stony Run,	8.36
	Russell Agri. Chemical Co., Newark, N. J.		
281	Ammoniated Dissolved Bone Phosphate,	C. H. Humphreys, Morrisville,	6.47
282	Special Corn Manure,	C. H. Humphreys, Morrisville,	5.23
	Schaal-Sheldon Fertilizer Co., Erie, Pa.		
811	Empire,	J. P. Lock & Co., Grove City,	8.65
809	Guano,	J. P. Lock & Co., Grove City,	10.49
810	Truckers' Manure,	J. P. Lock & Co., Grove City,	9.49
	Scientific Fertilizer Co., Pittsburg, Pa.		
109	†Scientific Bone, Meat and Potash,	Jac. M. Lohr, Davidsville,	5.90
713		W. A. Baver, Bradley Jct.,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
														$25.00	677
														25.00	376
3.83	3.51	2.31	**9.65**	9.00	***7.34**	8.00	4.52	.....	**4.52**	4.00	**1.65**	1.65	$25.04	30.00	227
														28.00	602
														35.00	740
														21.00	518
														22.00	223
3.26	5.44	1.91	**10.61**	9.00	**8.70**	8.00	2.16	.....	**2.16**	2.00	**.90**	.82	20.86	18.50	88
														24.00	691
														20.00	747
5.89	3.23	7.35	**16.47**	11.00	**9.12**	6.00	3.14	.....	***3.14**	5.00	**1.67**	1.65	28.22	26.50	297
5.63	3.96	2.18	**11.77**	9.00	**9.59**	8.00	2.14	.....	**2.14**	1.00	***1.25**	1.65	23.65	19.00	491
5.98	3.40	1.70	**11.08**	9.00	**9.38**	8.00	1.05	.....	**1.05**	1.00	**1.40**	.82	22.70	18.00	323
5.61	3.58	1.93	**11.12**	10.00	**9.19**	9.00	3.52	.....	**3.52**	3.00	**1.21**	.82	24.25	19.60	605
														19.00	402
6.06	3.59	1.79	**11.44**	10.00	**9.65**	9.00	2.43	.....	***2.43**	3.00	**1.08**	.82	23.26	22.00	706
1.14	3.59	5.06	**9.79**	.....	***4.73**	7.00	2.05	.....	***2.05**	5.50	***.71**	2.06	16.95	24.00	493
4.86	4.30	7.40	**16.56**	11.50	***9.16**	9.50	3.22	.....	**3.22**	2.00	**1.50**	1.24	27.62	32.00	281
4.90	4.37	7.35	**16.62**	9.00	**9.27**	8.00	3.37	.....	**3.37**	3.00	***1.50**	1.65	27.87	28.00	282
4.40	3.51	2.48	**10.39**	8.00	**7.91**	7.00	2.17	.....	**2.17**	1.00	**1.10**	.82	21.21	22.00	811
5.10	3.24	2.30	**10.64**	9.00	**8.34**	8.00	4.08	.....	**4.08**	4.00	**1.17**	.82	23.89	25.00	809
5.24	3.81	2.65	**11.70**	.....	**9.05**	.....	6.49	.....	**6.49**	.....	**2.16**	.....	31.23	33.00	810
4.03	2.49	5.55	***12.07**	16.00	**6.52**	.....	.67	8.10	**8.77**	.....	***3.17**	3.30	37.42	31.00	109
														29.00	713

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.	Moisture in 100 pounds.
111	†Scientific Corn and Grain Fertilizer,	Jac. M. Lohr, Davidsville,	6.43
710		W. A. Baver, Bradley Jct.,	
711	Scientific Economy Fertilizer,	W. A. Baver, Bradley Jct.,	7.61
110	†Scientific Potato Fertilizer,	Jac. M. Lohr, Davidsville,	6.00
709		W. A. Baver, Bradley Jct.,	
	Scott Fertilizer Co., Elkton, Md.		
173	†Corn and Oats Grower,	J. A. Geiger, Joanna,	9.38
438		D. D. Fritch & Bro., Macungie,	
440	†Potato Grower,	D. D. Fritch & Bro., Macungie,	6.68
494		W. H. Hoffman, New Tripoli,	
171	†Potato, Truck and Tobacco Grower,	L. A. Geiger, Joanna,	7.68
738		Daniel R. Stein, Orwigsburg,	
131	Sure Growth Compound,	N. A. Eisenhauer,	12.19
130	†Sure Growth Super Phosphate,	N. A. Eisenhauer,	10.53
172		L. A. Geiger, Joanna,	
	Shenandoah Fert. Co., Shenandoah, Pa.		
420	Ringtown Clover,	D. O. Hill, Berne,	10.91
	M. L. Shoemaker & Co., Philadelphia, Pa.		
11	Swift Sure Special 10 Per Cent. Fertilizer No. 2,	Chester Co. As'n of Farmers, Kelton,	10.14
169	Swift Sure Super Phosphate for Potatoes,	J. D. Mountz, Joanna,	9.08
	Chas. A. Sickler & Bro., Wilkes-Barre, Pa.		
203	Empire Lawn Fertilizer,	Foote & Fuller, Scranton,	4.56
213	†Empire Phosphate,	Nelson Graves, Jermyn,	6.21
539		J. L. Ward, S. Towanda,	
215	†Graves Potato and Tobacco Manure,	Nelson Graves, Jermyn,	6.51
446		O. P. Beebe, Montrose,	
459	Special Manure for Potatoes and Vegetables,	A. S. Mowery, Meshoppen,	6.92
458	†Vegetable and Vine Fertilizer,	A. E. Mowery, Meshoppen,	6.07
471		J. M. Ayers, N. Towanda,	
	H. H. Smyser, York, Pa.		
397	Chicago Bone and Tankage,	H. H. Smyser, York,	6.25

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
4.43	2.64	3.82	**10.89**	9.00	***7.07**	8.00	2.40	.....	**2.40**	2.00	***1.28**	1.65	$22.03	$21.00	111
														19.00	710
4.82	2.91	5.68	**13.41**	10.00	***7.73**	9.00	4.64	.....	**4.64**	4.00	**1.89**	1.65	28.29	23.00	711
4.29	1.94	4.84	**11.07**	10.00	***6.23**	6.00	4.67	1.55	**6.22**	6.00	**2.59**	2.47	30.87	28.00	110
														26.00	709
3.02	5.30	1.91	**10.23**	9.00	**8.32**	8.00	3.35	.....	**3.35**	2.00	**.51**	.41	20.10	18.00	173
														18.00	438
4.11	3.28	1.48	**8.87**	7.00	**7.39**	6.00	4.67	4.93	***9.60**	10.00	***1.48**	1.65	30.20	26.00	440
														28.00	494
3.92	4.53	2.26	**10.71**	9.00	**8.45**	7.00	5.85	.....	**5.85**	5.00	**1.78**	1.65	28.17	24.00	171
														23.00	738
6.44	3.67	1.35	**11.46**	8.00	**10.11**	7.00	2.13	4.33	***6.46**	7.00	***2.84**	3.30	35.40	30.00	131
7.77	4.64	1.94	**14.35**	12.00	**12.41**	10.00	2.25	.....	**2.25**	2.00	***1.51**	1.65	27.90	20.00	130
														23.00	172
5.41	3.81	2.23	**11.45**	.....	**9.22**	8.00	1.86	.....	***1.86**	2.00	***.91**	1.65	21.51	21.00	420
5.03	2.54	4.94	**12.51**	.....	***7.57**	8.00	10.88	.....	**10.88**	10.00	***2.01**	2.06	34.58	25.30	11
6.40	2.37	5.97	**14.74**	11.00	**8.77**	8.00	6.91	.....	**6.91**	6.50	**2.52**	2.47	34.47	31.50	169
.14	3.07	3.49	***6.70**	9.00	***3.21**	8.00	3.48	.....	**3.48**	2.00	**1.72**	1.65	19.87	60.00	203
3.15	3.11	1.98	***8.24**	9.00	***6.26**	8.00	2.32	.....	**2.32**	2.00	***1.57**	1.65	20.98	.....	213
														22.00	539
3.44	2.13	2.66	**8.23**	.....	***5.57**	6.00	4.45	.....	***4.45**	5.00	**1.22**	.82	21.43	.....	215
														30.00	446
1.56	2.14	3.22	***6.92**	9.00	***3.70**	8.00	6.27	.....	***6.27**	6.50	***1.76**	3.30	23.43	36.00	459
2.09	2.31	3.64	**8.04**	.....	***4.40**	8.00	3.39	.....	***3.39**	4.00	***1.82**	2.47	21.75	33.00	453
														.....	471
5.72	1.80	3.87	**11.39**	10.00	***7.52**	8.00	1.61	.....	**1.61**	1.00	**1.05**	1.03	20.89	19.00	397

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.	Moisture in 100 pounds.
	Southern Fertilizer Co., York, Pa.		
413	†Ammoniated Dissolved Bone,	Lebernight & Ferree, Red Lion,	12.38
16		Passmore & Gillespie, Nottingham,	
663		Fletcher George, Lilly,	
733	†Farmers' Choice Brand,	A. F. Kimmel, Orwigsburg,	9.36
56		C. J. Bushey, York county,	
812		D. C. Emery, Grove City,	
806	†General Crop Grower,	Sproul Bros., Boyers,	9.96
55		C. J. Bushey, Dillsburg,	
813		D. C. Emery, Grove City,	
	John Straining, Harrisburg, Pa.		
754	Bone and Meat Fertilizer,	John Straining, Harrisburg,	6.55
	Swift & Co., Chicago, Ill.		
353	Complete Fertilizer,	H. L. Dean & Co., Addison,	9.40
354	Super Phosphate,	H. L. Dean & Co., Addison,	10.02
	J. M. Templin, Honeybrook, Pa.		
189	†No. 8 H. G. Potash Manure,	James Stout, Shartelsville,	6.55
261		Harrison Ross, Atglen,	
	James Thomas, Williamsport, Pa.		
573	H. G. Bone Super Phosphate,	James Thomas, Williamsport,	9.62
557	†Klondyke Brand,	F. S. Manley, East Canton,	10.42
516		Levi Watt, Milroy,	
590		J. B. Smith, Washingtonville,	
572	Special Compound for Wheat, Oats, Corn and Grass,	James Thomas, Williamsport,	10.03
	I. P. Thomas & Sons Co., Philadelphia, Pa.		
481	Champion Bone Phosphate,	Wendell Lick, Dushore,	5.97
465	Improved Super Phosphate,	Sol. Choffer, Wysox,	9.85
453	Normal Bone Phosphate,	E. D. Snyder, Brooklyn,	8.73
247	†Potato Fertilizer,	Samuel Hough, Hatboro,	10.11
455		E. D. Snyder, Brooklyn,	
246	Special Truckers Fertilizer,	Samuel Hough, Hatboro,	8.74

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
														$24.00	413
7.29	3.02	1.28	**11.59**	11.20	**10.31**	10.00	2.74	.....	**2.74**	2.50	**1.83**	1.65	$27.16	24.00	16
														26.00	663
														22.00	733
3.25	5.20	1.43	***9.88**	10.00	***8.45**	9.00	2.09	.....	**2.09**	2.00	**1.00**	.82	20.72	18.00	56
														23.00	812
														20.00	806
3.75	4.45	.65	***8.85**	9.00	**8.20**	8.00	2.20	.....	**2.20**	2.00	**.58**	.41	18.64	17.50	55
														20.00	813
.12	1.91	1.52	**3.55**	.....	***2.03**	3.51	.27	.35	**.62**	.....	***1.22**	1.27	12.78	15.00	754
6.10	3.25	2.07	**11.42**	11.00	**9.35**	8.00	2.25	.....	**2.25**	1.00	**1.33**	1.03	23.86	21.00	353
6.83	3.52	2.00	**12.35**	12.00	**10.35**	8.00	1.78	.....	***1.78**	2.00	***1.49**	1.65	25.14	23.00	354
														28.00	189
6.97	3.30	2.85	**13.12**	12.00	***10.27**	11.00	.53	7.42	***7.95**	8.00	**.93**	.82	30.88	27.00	261
5.15	3.80	1.52	***10.47**	14.00	***8.95**	9.00	3.05	.....	**3.05**	2.50	**2.12**	2.06	26.83	28.00	573
														.....	557
7.09	2.18	.59	***9.86**	10.00	**9.27**	9.00	3.25	.....	**3.25**	3.00	**.99**	.82	22.81	23.00	516
														20.00	590
5.95	4.08	.64	***10.67**	11.00	**10.03**	9.00	3.55	.....	**3.55**	3.00	**1.24**	1.03	24.81	24.00	572
7.74	2.86	2.69	**13.29**	12.00	**10.60**	10.00	.40	3.27	***3.67**	4.00	**2.63**	1.65	32.91	26.00	481
7.73	2.75	1.39	**11.87**	12.00	**10.48**	10.00	1.84	.....	**1.84**	1.00	**1.04**	.82	23.34	21.00	465
6.51	2.86	1.08	**10.45**	9.50	**9.37**	8.50	2.14	.....	**2.14**	1.50	**1.20**	1.03	22.76	25.00	453
														30.00	247
6.56	3.22	1.98	**11.76**	10.50	**9.78**	9.00	6.00	.....	**6.00**	6.00	**1.93**	1.65	30.52	.....	455
5.18	1.72	2.14	**9.04**	7.00	**6.90**	6.00	7.53	.....	**7.53**	6.00	***3.09**	3.30	33.49	32.00	246

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.	Moisture in 100 pounds.
	Trenton Bone Fertilizer Co., Trenton, N. J.		
278	Trenton Corn Mixture,	L. A. Howells, Morrisville,	4.80
274	Trenton Corn and Truck Fertilizer,	L. A. Howells, Morrisville,	6.12
273	Excelsior,	L. A. Howells, Morrisville,	4.58
277	Trenton Potato Manure,	L. A. Howells, Morrisville,	6.05
276	Trenton Special Potato Manure,	L. A. Howells, Morrisville,	6.76
271	Trenton Super Phosphate,	L. A. Howells, Morrisville,	10.96
275	Trenton $32 Potato Manure,	L. A. Howells, Morrisville,	6.38
272	Trenton XX Brand Fertilizer,	L. A. Howells, Morrisville,	5.53
	Walker, Stratman & Co., Pittsburg, Pa.		
836	Potato Special,	A. O. Hunter & Sons, Crawf's Cor's,	7.00
	W. E. Whann, William Penn, Pa.		
521	Chester Valley Raw Bone Super Phosphate,	Francis Hower, Mifflintown,	7.13
	Windle, Doan & Co., Coatesville, Pa.		
262	Potato Phosphate,	Jos. Morrell, Parkesburg,	10.54
	The R. A. Wooldridge Co., Baltimore, Md.		
18	†Champion Giant Phosphate,	Passmore & Gillespie, Sylmar,	12.95
239		A. B. Hearn, Gorsuch,	
223	Triumph,	Andrew Harter, Coburn,	9.75
341	†Triumph Pure Bone Phosphate,	N. E. Bitner, Kimmel,	10.28
17		Passmore & Gillespie, Sylmar,	
404		G. B. Murphy, Keys,	
	York Chemical Works, York, Pa.		
66	Dempwolf's Corn and Oats Special Fertilizer,	Geo. W. Dick, York county,	12.51
79	Dempwolf's Half and Half Fertilizer,	J. H. Little, Idaville,	9.00
575	Dempwolf's Potato and Truck Special Fertilizer,	A. T. Baird, Lock Haven,	7.29
574	Special Tobacco Fertilizer,	A. T. Baird, Lock Haven,	6.44
53	Dempwolf's Standard Fertilizer,	A. J. Wierman, Dillsburg,	13.28
	Henry S. Zook, Elverson, Pa.		
168	†No. 5 Pride of Chester Corn, Oats and Wheat Phos.,	Jos. M. Jackson, Joanna,	10.62
511		Henry S. Zook, Geigertown,	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
1.00	3.30	4.73	**9.03**	.....	***4.30**	8.00	4.94	.....	***4.94**	7.00	**2.42**	1.65	$26.00	$26.00	278
1.79	5.31	6.50	**13.60**	.....	***7.10**	10.00	6.37	.....	**6.37**	5.00	**3.64**	2.47	36.34	35.00	274
2.34	5.67	2.65	**10.66**	.....	**8.01**	8.00	2.59	.....	**2.59**	2.00	**.83**	.82	20.62	19.00	273
4.06	3.40	2.35	**9.81**	.....	**7.46**	7.00	7.66	.....	**7.66**	3.00	**1.73**	1.65	28.80	25.00	277
4.49	2.49	2.80	**9.78**	.....	***6.98**	9.00	9.95	.....	***9.95**	10.00	**3.39**	3.30	37.46	32.00	276
6.10	2.64	3.09	**11.83**	.....	***8.74**	11.00	3.66	.....	**3.66**	3.00	***2.41**	2.47	29.30	27.00	271
4.66	2.17	2.15	**8.98**	.....	***6.83**	9.00	10.14	.....	**10.14**	10.00	**2.68**	2.47	34.44	31.00	275
2.64	4.06	4.64	**11.34**	.....	***6.70**	9.00	3.52	.....	**3.52**	2.00	**1.80**	.82	24.90	21.00	272
4.46	1.80	4.63	**10.89**	10.00	***6.26**	8.00	4.93	1.26	**6.19**	6.00	**2.54**	2.47	30.57	25.00	836
5.26	4.55	5.05	**14.86**	11.00	**9.81**	8.00	2.63	.....	***2.63**	3.00	***1.96**	1.99	28.47	.....	521
5.52	6.36	2.95	**14.83**	.....	**11.88**	.....	3.80	.....	**3.80**	.....	**.87**	.....	20.53	28.00	262
6.98	2.79	.87	**10.64**	.....	**9.77**	9.00	2.24	.....	**2.24**	2.00	**.91**	.82	22.09	19.00	18
														.....	239
4.91	3.17	1.27	**9.35**	.....	**8.08**	8.00	4.28	.....	**4.28**	4.00	**1.25**	1.24	23.68	24.00	223
														22.50	341
5.36	2.80	1.16	**9.32**	.....	**8.16**	8.00	1.73	2.63	**4.36**	4.00	**1.45**	1.24	25.06	24.00	17
														20.50	404
5.85	2.77	.76	***9.38**	10.00	**8.62**	8.00	5.22	.....	**5.22**	5.00	***1.44**	1.65	25.86	21.00	66
1.14	5.84	1.60	**8.58**	8.00	***6.98**	7.00	1.20	.....	**1.20**	1.00	*.63	.82	16.68	17.00	79
4.16	4.60	2.43	**11.19**	10.00	**8.76**	8.00	1.20	5.34	***6.54**	7.00	***2.19**	2.47	31.88	30.60	575
5.64	2.20	.93	**8.77**	8.00	**7.84**	7.00	.....	9.05	***9.05**	10.00	***2.56**	3.30	34.71	38.60	574
5.33	4.37	1.31	**11.01**	11.00	**9.70**	9.00	1.33	.....	***1.33**	2.00	***1.65**	2.47	24.07	22.00	53
4.00	4.20	3.07	**11.27**	11.00	***8.20**	10.00	2.21	.....	**2.21**	2.00	**.56**	.41	15.33	18.00	168
														18.00	511

*Constituent falls below guaranty.

ROCK AND POTASH

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.
	The American Agri. Chemical Co., N. Y.	
65	Gem Alkaline Phosphate,	O. F. Arnold, York county,
	Bradley Branch, New York.	
331	†Bradley's Alkaline Bone with Potash,	Peter Fink, Somerset,
299		A. F. Stutzman, Johnstown,
462		Daniel Hurley, Wysox,
	Canton Chemical Branch, Baltimore, Md.	
667	†Canton Chemical Soluble Bone and Potash,	Skyles, Miller & Co., Martinsburg,
412		Lebernight & Ferree, Red Lion,
337		Jas. D. Miller, Rockwood,
686		H. F. Gump, Everett,
762		W. B. Wivey, Middleburg,
	Clark's Cove Branch, New York.	
490	Clark's Cove Super Phosphate with Potash,	P. W. Hunsinger, Dushore,
	Detrick Branch, Baltimore, Md.	
764	†Detrick's Gem Alkaline Phosphate,	Stenninger Bros., Middleburg,
768		Wm. M. Atkinson, McVeytown,
15	†Detrick's Soluble Bone Phosphate and Potash,	Passmore & Gillespie, Sylmar,
520		Jas. McCully, Mifflintown,
217	Detrick's Soluble Bone and Phosphate Fertilizer,	W. T. Hoover, Port Matilda,
	Great Eastern Branch, Rutland, Vt.	
425	†G. E. Soluble Bone and Potash,	A. L. Stetzler, Shoemakersville,
328		J. M. Miller, Bills,
254		William Jones, Kelton,
464		— —, Wysox Station,
484		Jos. Yorkon, Dushore,
817		J. B. Atwell, Big Bend,
	Lazaretto Guano Branch, Baltimore Md.	
339	†Lazaretto Dissolved Bone and Potash,	Walker Bros., Glade,
689		J. E. Taylor, Mann's Choice,

†Composite sample.

FERTILIZERS.

Acid and Potash.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
12.49	4.46	4.16	.46	**9.08**	7.00	**8.62**	6.00	3.14	.....	**3.14**	3.00	$13.52	$14.00	65
10.46	6.55	4.58	1.76	**12.89**	11.00	**11.13**	10.00	2.11	.....	**2.11**	2.00	14.66	16.00	331
													16.00	299
													15.00	462
11.74	5.95	5.58	1.07	**12.60**	11.00	**11.53**	10.00	2.33	.....	**2.33**	2.00	14.83	18.75	667
													15.00	412
													16.00	337
													17.00	686
													15.00	762
10.10	4.89	5.69	2.27	**12.85**	.....	**10.58**	.....	2.41	.....	**2.41**	.....	21.67	18.00	490
9.07	4.93	2.80	.71	**8.41**	.....	**7.73**	.....	3.30	.....	**3.30**	.....	13.27	14.00	764
													12.00	763
8.96	3.94	6.44	1.14	**11.52**	11.00	**10.38**	10.00	2.26	.....	**2.26**	2.00	13.81	13.50	15
													15.00	520
10.99	2.94	7.41	1.69	**12.04**	11.00	**10.35**	10.00	2.09	.....	**2.09**	2.00	13.72	17.00	217
9.84	4.15	5.94	1.74	**11.83**	11.00	**10.09**	10.00	2.57	.....	**2.57**	2.00	14.20	14.00	425
													14.00	328
													16.00	254
													.....	464
													17.00	484
													18.00	817
11.04	3.41	8.68	1.42	**13.51**	11.00	**12.09**	10.00	3.55	.....	**3.55**	2.00	16.20	18.00	339
													13.65	689

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
106	†Lazaretto H. G. Dissolved Bone and Potash, ...	Aaron F. Swank, Davidsville, ...
73		D. B. Meyers, Gardeners Station, ...
460		Daniel Hurley, Wysox, ...
	Milsom Branch, East Buffalo, N. Y.	
421	†Milsom's Dissolved Bone and Potash, ...	Jacob Hollenbach, Hamburg, ...
784		J. B. Miller, Wesley, ...
	Moro-Philips Branch, Philadelphia, Pa.	
225	Moro-Philips' Gem, ...	John H. Weber, Oak Hall, ...
	Packers Union Branch, Rutland, Vt.	
78	†Packers Union Banner Wheat Grower, ...	D. B. Meyers, Gardeners Station, ...
687		A. C. Richards, Mann's Choice, ...
	Quinnipiac Branch, New York.	
60	Quinnipiac Dissolved Bone and Potash, ...	Paxton Flour and Feed Co., Bowmansdale,
	Reese Branch, Baltimore, Md.	
744	Reeses' H. G. Potash Mixture, ...	W. S. Weaver, Easton, ...
496	Reeses' Wheat Special, ...	Wm. H. Reitz, Lynport, ...
	Susquehanna Branch, Baltimore, Md.	
96	†Susquehanna Alkaline Bone Phosphate, ...	James Lean & Son, Dillsburg, ...
2		Jos. Brown, Kelton, ...
543		A. B. Cranmer, Monroeton, ...
563		G. J. Garnhart, Dewart, ...
579	Susquehanna Grain and Grass Producer, ...	J. N. Getz, Lock Haven, ...
619	Susquehanna H. G. Bone Phosphate, ...	W. A. Bailits, Dauphin, ...
564	†Susquehanna H. G. Bone and Potash, ...	G. J. Garnhart, Dewart, ...
578		J. N. Getz, Lock Haven, ...
	Tygert-Allen Branch, Philadelphia, Pa.	
351	Tygert-Allen's Alkaline Bone Phosphate, ...	R. S. McMillen, Kingwood, ...
439	Tygert-Allen's Star Soluble Bone and Potash, ...	J. Singwaster & Co., Macungie, ...
	Zell Branch, Baltimore, Md.	
77	Zell's Dissolved Bone Phosphate and Potash, ...	D. B. Meyers, Gardners Sta., ...

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
													$18.00	106
11.20	9.65	3.51	.83	13.99	11.00	13.16	10.00	4.09	.....	4.09	2.00	$17.95	18.00	73
													18.00	469
													14.00	421
7.82	5.89	5.33	2.27	13.49	11.00	11.22	10.00	1.15	.....	*1.15	2.00	13.86	18.00	781
11.77	3.95	4.49	.61	9.05	.....	8.44	.....	3.01	.....	3.01	.....	13.22	14.50	225
													14.00	78
10.38	1.34	8.93	2.13	12.40	11.00	10.27	10.00	2.11	.....	2.11	2.00	13.65	13.65	687
13.12	7.34	5.26	.51	13.11	11.00	12.60	10.00	2.35	.....	2.35	2.00	15.43	14.50	60
10.61	4.34	6.83	1.76	*12.93	13.00	*11.17	12.00	5.21	.....	5.21	5.00	17.59	20.00	744
7.98	1.40	7.60	2.06	11.06	11.00	*9.00	10.00	2.21	.....	2.21	2.00	12.96	16.00	496
													16.00	96
													14.00	2
11.75	1.72	9.07	1.49	12.28	11.00	10.79	10.00	2.17	.....	2.17	2.00	13.83	16.00	543
													15.00	563
12.75	9.33	2.85	.56	12.44	.....	12.18	.....	3.10	.....	3.10	.....	16.11	27.00	579
11.27	9.00	2.90	.22	*12.12	13.00	*11.90	12.00	6.92	.....	6.92	5.00	19.74	23.00	619
													20.00	561
10.33	9.40	3.20	.22	*12.82	13.00	12.60	12.00	5.38	.....	5.38	5.00	18.67	20.00	578
11.81	9.05	2.72	.63	12.40	11.00	11.77	10.00	2.10	.....	2.10	2.00	14.92	15.00	351
8.52	1.09	7.70	2.24	11.03	11.00	*8.79	10.00	2.08	.....	2.08	2.00	12.78	15.50	439
11.40	3.65	7.27	1.55	12.47	12.00	*10.92	11.00	2.14	.....	2.14	2.00	14.14	14.00	77

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The Armour Fert. Works, Chicago, Ill.	
125	†Phosphate and Potash No. 2, ...	J. W. Painter & Co., Red Top, ...
26		Passmore & Gillespie, Nottingham, ...
382		D. E. Brown, East Berlin, ...
	R. S. Aucker, Shamokin, Pa.	
628	Economy Potash Phosphate, ...	Geo. R. Hendricks, Selinsgrove, ...
	Baltimore Pulverizing Co., Baltimore, Md.	
761	Penniman's Excelsior Fertilizer, ...	A. M. Carpenter, Beavertown, ...
	Baugh & Sons Co., Philadelphia, Pa.	
90	Soluble Alkaline Super Phosphate, ...	S. N. Bailey & Bro., Dillsburg, ...
	Bowker Fertilizer Co., Boston, Mass.	
452	†Empire State Bone and Potash, ...	P. H. Taylor, Wysox Sta., ...
825		J. H. Sheffer, Sligo, ...
312	Wheat Grower, ...	A. Hostetler, Geistown, ...
	Henry Cope & Co., Lincoln University, Pa.	
33	Soluble Bone and Potash, ...	Passmore & Gillespie, Nottingham, ...
	Josiah Cope & Co., Lincoln University, Pa.	
290	†Soluble Bone and Potash, ...	Josiah Cope & Co., Oxford, ...
426		C. S. Drelbelbels, Shoemakersville, ...
	Eureka Fertilizer Co., Perryville, Md.	
409	†Alkaline Bone and Potash, ...	F. H. Shenberger, Brownton, ...
284		Lewis H. Kirk & Co., Nottingham, ...
524		Dimm & Kiser, Thompsontown, ...
526		Dimm & Kiser, Thompsontown, ...
	W. S. Farmer & Co., Baltimore, Md.	
602	B. & P. Phosphate, ...	Bogar & Bingaman, Herndon, ...
	Griffith & Boyd, Baltimore, Md.	
148	†XX Potash Manure, ...	Jacob Hummel, Red Top, ...
84		W. A. Storner, Storners Sta., ...
	Hanover Fertilizer Co., Baltimore, Md.	
384	Dissolved Bone Phosphate, ...	H. F. Stambaugh, Abbottstown, ...

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
12.30	7.00	1.59	.31	*8.90	10.00	8.59	8.00	4.61	.....	*4.61	5.00	$15.20	$18.00	125
													16.50	26
													18.00	382
7.74	3.63	5.59	.88	10.10	9.00	9.22	8.00	3.82	.....	3.82	2.00	14.58	16.50	628
9.60	2.16	7.90	1.34	11.40	.....	10.06	10.00	2.84	.....	2.84	2.50	14.08	15.65	761
7.75	3.11	7.07	4.12	14.30	.....	10.18	10.00	2.16	.....	2.16	2.00	14.56	16.00	90
6.07	2.19	5.73	2.71	10.63	9.00	*7.92	8.00	3.09	.....	3.09	3.00	13.58	17.00	452
													21.00	825
12.45	4.35	5.05	2.84	12.24	11.00	*9.40	10.00	2.56	.....	2.56	1.00	14.20	14.50	312
10.69	2.14	5.87	.51	*8.52	12.00	*8.01	10.00	3.73	.....	3.73	2.00	13.47	16.50	33
9.01	4.75	6.31	.96	12.02	.....	11.06	10.00	2.16	.....	2.16	2.00	14.14	14.00	290
													14.00	426
9.29	7.39	3.24	2.74	13.37	12.00	10.63	10.00	2.59	.....	2.59	2.00	15.31	16.00	409
													13.50	284
													14.00	524
													19.00	526
13.46	9.47	2.52	.20	12.19	11.00	11.99	10.00	2.31	.....	2.31	2.00	15.16	15.00	602
12.46	6.70	3.76	1.12	11.58	11.00	10.46	10.00	5.33	.....	5.33	5.00	17.36	18.00	148
12.91	5.91	4.42	.99	11.32	11.00	10.33	10.00	5.34	.....	5.34	5.00	17.11	17.00	84
10.12	1.64	7.06	2.00	10.70	.....	8.70	.....	2.34	.....	2.34	.....	12.94	14.00	384

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
236	H. G. Bone and Potash, ...	Isenberg Milling Co., Huntingdon, ...
115	†Royal Bone and Potash, ...	Josiah Specht, Kantner, ...
231		E. M. Soope, Petersburg, ...
	M. P. Hubbard & Co., Baltimore, Md.	
50	Soluble Bone and Potash for Wheat and Grass, ...	E. A. Keasy, Dillsburg, ...
	Jarecki Chemical Co., Sandusky, O.	
650	Dissolved Bone with Potash, ...	S. J. Saint, Sharpsburg, ...
	Lackawanna Chem. & Fert. Co., Moosic, Pa.	
430	†Alkaline Bone, ...	Henry G. Stamm, Leesport, ...
199		R. J. Fairfield, Doleville, ...
554		S. W. Lyons & Son, Canton, ...
777		Miles Mattern, Scotia, ...
	Lister's Agri. Chem. Works, Newark, N. J.	
179	Alkaline Bone, ...	John E. Sheeler, Geigertown, ...
	Nassau Fertilizer Co., New York.	
470	Nassau Grain and Grass Fertilizer, ...	Farmers Club, Orwell, ...
427	†Potash and Phosphate, ...	P. S. Shappel, Mohrsville, ...
444		Irwin Plott, Meyersburg, ...
	Patapsco Guano Co., Baltimore, Md.	
347	†Baltimore Soluble Phosphate, ...	C. B. Moore, N. Lexington, ...
391		J. N. Hurst, New Oxford, ...
	Pa. Amm. & Fert. Works, Harrisburg, Pa.	
64	Soluble Bone and Potash, ...	O. F. Arnold, York county, ...
	Piedmont-Mt. Airy Guano Co., Balto., Md.	
235	Piedmont Special Potash Mixture, ...	John G. Simpson, Huntingdon, ...
	Pittsburg Provision Co., Pittsburg, Pa.	
637	Phosphate and Potash, ...	J. H. Miller, Ligonier, ...

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
10.33	4.15	5.00	1.48	*10.63	11.00	*9.15	10.00	4.56	.....	4.56	4.00	$15.57	$18.00	236
11.05	1.89	7.31	1.54	10.74	10.00	9.20	9.00	2.03	.....	2.03	1.00	12.80	16.00	115
													16.00	231
13.31	7.78	3.34	.56	11.68	.....	11.12	10.00	2.02	.....	2.02	2.00	14.28	15.00	50
9.44	7.15	4.87	3.68	15.70	13.00	12.02	12.00	.80	2.13	*2.93	3.00	17.19	23.00	650
													14.00	439
9.20	5.61	2.83	1.00	*9.44	10.00	8.44	8.00	1.80	.....	1.80	1.62	12.34	15.00	199
													17.50	554
													15.00	777
11.78	9.01	1.37	.67	11.05	.....	10.38	10.00	1.20	1.51	2.71	2.00	14.98	15.00	179
10.88	5.27	5.47	2.45	13.19	11.00	10.74	10.00	2.26	.....	2.26	2.00	14.67	12.15	470
9.74	2.59	7.04	2.55	12.18	11.00	*9.63	10.00	5.10	.....	5.10	5.00	16.64	17.00	427
													14.40	444
12.26	8.34	3.39	.55	12.28	12.00	11.73	11.00	2.42	.....	2.42	2.00	15.10	14.50	347
													18.00	391
11.25	1.28	7.46	2.48	11.22	11.00	*8.74	10.00	2.72	.....	2.72	2.00	13.46	16.00	64
8.60	3.08	5.59	2.19	10.86	.....	*8.67	10.00	4.87	.....	*4.87	5.00	15.69	20.00	235
7.18	.56	5.88	4.93	11.37	10.00	*6.44	9.00	2.33	.....	2.33	2.00	12.50	18.00	637

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	R. H. Pollock, Baltimore, Md.	
626	†Victor Bone Phosphate,	J. L. Nisley, Middletown,
517		H. M. Owens, Lewistown,
378		E. W. Rupp, Shiremanstown,
676		A. M. McClure, Everett,
748		Jerome S. Williams, Stroudsburg,
	Rasin-Monumental Co., Baltimore, Md.	
119	Bone and Potash Fertilizer,	Barron Bros., Rockwood,
705	Special Formula for Corn and Buckwheat,	J. J. Hank, Carroltown,
	Scientific Fertilizer Co., Pittsburg, Pa.	
712	Scientific Bone and Potash Fertilizer,	W. A. Baver, Bradley Junction,
708	Scientific Phosphate and Potash,	W. A. Baver, Bradley Junction,
	Scott Fertilizer Co., Elkton, Md.	
129	†Tip Top and Potash,	N. A. Eisenhauer, Kelly Point,
737		Daniel R. Stein, Orwigsburg,
	H. H. Smyser, York, Pa.	
398	Chicago Crop Grower,	H. H. Smyser, York,
	James Thomas, Williamsport, Pa.	
558	†Dissolved Florida Bone and Potash Phosphate,	F. S. Manley, East Canton,
515		Levi Watt, Milroy,
571		James Thomas, Williamsport,
822	Florida Bone and Potash,	Amos Meyers, Sligo,
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
454	†Special Corn Fertilizer,	E. D. Snyder, Brooklyn,
68		D. F. Stitzwell, York county,
466		Sol. Choffer, Wysox,
140	†Special Alkaline Bone,	W. H. Mack, Pottsgrove,
67		D. F. Stitzwell, York county,
482		Wendell Lick, Dushore,
	The R. A. Wooldridge Co., Baltimore, Md.	
20	†German Potash Mixture,	Passmore & Gillespie, Sylmar,
533		J. L. Ritter & Son, Newport,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 24.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
													$15.00	626
													17.00	517
10.82	1.79	7.64	1.37	**10.80**	10.00	**9.43**	9.00	1.89	.....	**1.89**	1.00	$12.73	13.00	378
													15.00	676
													16.00	748
11.43	6.93	4.11	1.75	**12.79**	11.50	**11.04**	10.00	2.29	.....	**2.29**	2.00	14.85	15.50	119
14.04	1.45	6.04	1.58	**9.07**	7.50	**7.49**	6.00	3.06	.....	**3.06**	3.00	12.75	15.00	705
10.99	7.36	3.31	1.42	**12.09**	11.00	**10.67**	10.00	4.69	.....	*4.69	6.00	17.00	20.00	712
9.51	5.08	3.99	2.37	**11.44**	11.00	***9.07**	10.00	2.08	.....	**2.08**	2.00	13.47	16.00	708
													15.25	129
11.58	9.05	5.32	.98	**15.35**	13 00	**14.37**	11.00	2.33	.....	**2.33**	2.00	16.86	14.00	737
7.87	3.17	5.54	5.19	**13.90**	12.00	***8.71**	10.00	2.33	.....	**2.33**	2.00	14.28	15.00	398
													.....	558
11.53	6.60	5.18	.88	**12.66**	12.00	**11.78**	11.00	2.32	.....	**2.32**	2.00	14.94	17.50	515
													15.00	571
12.88	8.16	3.78	.63	**12.57**	12.00	**11.94**	11.00	2.14	.....	**2.14**	2.00	14.96	20.00	824
													.....	454
14.42	2.62	7.17	2.20	***11.99**	12.00	***9.79**	10.00	4.80	2.08	**6.88**	6.50	18.81	20.00	68
													.....	466
													18.00	140
14.74	3.14	6.81	2.44	**12.39**	12.00	***9.95**	10.00	4.48	.....	**4.48**	4.00	16.23	18.00	67
													18.00	482
													13.50	20
12.74	5.27	5.85	1.05	**12.17**	.....	**11.12**	10.00	2.18	.....	**2.18**	2.00	15.52	.....	533

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
224	Liberty Bell,	Andrew Harter, Coburn,
340	†Liberty Bell Potash Mixture,	W. E. Bltner, Kimmel,
249		Franklin G. Evans, Kelton,
640		J. Lambert, Lambertsville,
699		Geo. Huntley, Ebensburg,
	York Chemical Works, York, Pa.	
81	Dempwolf's Black Cross Fertillzer,	J. H. Little, Garners Sta.,
87	Dempwolf's Red Cross Fertilizer,	N. H. Spangler, Rossville,
69	Dempwolf's Red Cross Phosphate and Potash,	Amos F. Bushey, York county,
80	Dempwolf's Wheat Special,	J. H. Little, Idaville,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Computed commercial value at Department rating. (See p. 24.)	Selling price at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
13.41	9.42	3.10	.28	**12.80**	.....	**12.52**	12.00	2.97	.....	***2.97**	3.00	$16.15	$20.00	224
													17.50	340
													17.00	249
12.41	9.56	2.96	.28	**12.80**	.....	**12.52**	12.00	3.16	.....	**3.16**	3.00	16.38	17.50	640
													20.00	699
10.77	.98	8.49	2.45	**11.92**	11.00	***9.47**	10.00	2.39	.....	**2.39**	2.00	13.52	15.00	81
11.86	4.34	6.17	1.81	**12.32**	11.00	**10.51**	10.00	5.10	.....	**5.10**	5.00	17.08	16.00	87
12.48	4.95	5.57	1.71	**12.23**	11.00	**10.52**	10.00	4.99	.....	***4.99**	5.00	17.04	18.00	69
11.56	1.12	8.92	1.20	**11.24**	11.00	**10.04**	10.00	1.74	.....	***1.74**	3.00	12.79	15.00	80

*Constituent falls below guaranty.

DISSOLVED BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.
	Bowker Fertilizer Co., Boston, Mass.	
188	O. I. O. Phosphate, ...	F. L. Wagner, Upper Berne, ...
	Pittsburg Provision Co., Pittsburg, Pa.	
636	Guano Fertilizer, ...	J. H. Miller, Ligonier, ...

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Nitrogen in 100 Pounds.		Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Found.	Guaranteed.			
				Found.	Guaranteed.	Found.	Guaranteed.					
12.96	4.78	4.88	4.53	**14.19**	11.00	***9.66**	10.00	**.71**	.50	$15.19	$15.00	188
2.69	.51	4.01	7.20	**11.72**	11.00	***4.52**	9.00	**2.02**	1.65	19.50	18.00	636

*Constituent falls below guaranty.

GROUND BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	American Agri. Chemical Co., New York.	
673	Pure Ground Bone,	H. L. Stultz, Duncansville,
	Bradley Branch, New York.	
719	Bradley's Fine Ground Bone,	Punxsutawney H'dware Co., Punxsutawney,
	American Reduction Co., Pittsburg, Pa.	
367	Fine Ground Bone,	Eicher & Graft, Scottdale,
	Armour's Fertilizer Works, Chicago, Ill.	
683	†Bone Meal,	John S. Hershberger, Everett,
726		Frank Douglass, Indiana,
532	†Bone Meal,	J. L. Ritter & Son, Newport,
567		S. G. Updegraff, Williamsport,
	Baugh & Sons Co., Philadelphia, Pa.	
37	Bone Meal,	J. Watson Croft, Ambler,
326	Bone Meal,	C. H. Schmucker, Freidens,
319	Ground Raw Bone,	Jacob Stattler, Elton,
	The Berg Co., Philadelphia, Pa.	
431	Raw Bone Fine,	S. S. Bagentose, Leesport,
	A. H. Blaker & Co. Fox Chase, Pa.	
255	Raw Bone Meal,	J. Patterson Ramsey, Kelton,
	Bowker Fertilizer Co., Boston, Mass.	
304	†Bone Meal,	R. L. Watts, Scalp Level,
307		A. Hostetler, Geistown,
586	Bowker's Bone,	Bailey & Blair, Wellsboro,
	Cambria Fertilizer Co., Johnstown, Pa.	
665	†Pure Fine Ground Bone Dust,	Herman Neafer, Altoona,
698		H. A. Shoemaker, Ebensburg,
	Washington Ewing, Landenberg, Pa.	
25	Pure Ground Raw Bone,	Passmore & Gillesple, Nottingham,
	S. M. Hess & Bro., Philadelphia, Pa.	
510	Fine Ground Bone,	John Brown, Mantz,

†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Phosphoric Acid.		Nitrogen.				
	Diameter less than 1-50 inch "fine." Per cent.	Diameter greater than 1-50 inch, "coarse." Per cent.	Found.	Guaranteed.	Found.	Guaranteed.			
6.67	54	46	**22.13**	20.60	**3.83**	3.30	$27.25	$30.00	673
5.14	67	33	**26.26**	.....	**2.45**	.....	27.15	29.00	719
4.18	89	11	***20.85**	23.00	**4.24**	3.30	28.94	28.00	367
4.26	83	17	**24.24**	24.00	**3.31**	2.47	28.62	28.00	683
								28.00	726
								.....	532
9.21	86	14	***23.90**	24.00	**2.47**	2.47	26.31	30.00	567
8.14	71	29	**22.71**	21.50	**3.75**	3.50	28.12	29.00	37
9.47	90	10	**21.59**	21.50	**4.01**	3.50	28.87	.....	326
6.93	53	47	**21.63**	.....	**4.06**	.....	27.34	26.00	319
11.64	43	57	**21.63**	20.00	**4.01**	3.30	26.90	32.00	431
6.04	55	45	**23.14**	.....	**3.66**	.....	27.46	27.00	255
2.24	70	30	**26.03**	20.00	**1.77**	1.50	25.40	28.00	304
								25.00	307
2.40	75	25	**29.45**	.....	**1.72**	.....	27.82	35.00	586
6.15	61	39	**22.24**	20.00	**3.89**	3.00	27.75	30.00	665
								28.00	698
8.78	37	63	**21.88**	18.00	**4.02**	2.47	26.67	28.00	25
4.19	72	28	**22.20**	.....	**3.15**	.....	26.32	28.00	510

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Lackawanna Fert. & Chem. Co., Moosic, Pa.	
198	†Pure Ground Bone,	R. J. Tanfield, Daleville,
776	†Pure Ground Bone,	Miles Mattern, Scotia,
553	Warranted Pure Ground Bone,	S. W. Lyons, Canton,
	Mapes Formula & Peruvian Guano Co., N. Y.	
746	Pure Ground Bone,	R. F. Schwarz, Analomink,
	Newport, Wm. C., & Co., Philadelphia, Pa.	
257	Bone Meal,	W. S. Hastings & Son, Atglen,
	Pittsburg Provision Co., Pittsburg, Pa.	
633	Crescent Butchers Ground Bone,	J. H. Miller, Ligonier,
634	Pure Raw Bone Meal,	J. H. Miller, Ligonier,
	R. H. Pollock, Baltimore, Md.	
625	†Ground Animal Bone,	J. L. Nisley, Middletown,
675	†Ground Animal Bone,	A. M. McClure, Everett,
414	Soft Ground Bone,	Elias Gable, Red Lion,
	Pugh & Lyons, Oxford, Pa.	
298	Ground Raw Bone,	S. R. Dickey & Co., Oxford,
	Russell Agricul. Chem. Co., Newark, N. J.	
280	Ground Bone,	C. H. Humphreys, Morrisville,
	Scientific Fertilizer Co., Pittsburg, Pa.	
108	†Pure Raw Bone Meal,	Jac. M. Lohr, Davidsville,
714	†Pure Raw Bone Meal,	W. A. Baver, Bradley Jct.,
	Trenton Bone Fertilizer Co., Trenton, N. J.	
279	Trenton Pure Fine Ground Bone,	L. A. Howells, Morrisville,
	Windle, Doan & Co., Coatesville, Pa.	
264	Pure Ground Bone,	Jos. Worrall, Parkesburg,
	The R. A. Wooldridge Fert. Co., Balti., Md.	
250	Truckers Bone Meal,	Franklin Evans, Kelton,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Diameter less than 1-50 inch, "fine." Per cent.	Diameter greater than 1-50 inch, "coarse." Per cent.	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
8.87	71	29	*22.42	23.00	3.92	3.71	$28.29	$27.00	198
								28.00	776
5.50	56	44	23.41	23.00	4.14	3.71	28.88	35.00	553
6.65	67	33	23.15	.....	3.96	.....	28.76	36.00	746
4.16	82	18	*20.32	22.90	3.91	3.30	27.34	25.00	257
3.07	83	17	18.09	16.00	2.98	2.47	23.54	24.00	633
4.20	89	11	*20.28	22.00	4.32	4.12	28.69	25.00	634
5.87	63	37	20.37	.....	3.42	.....	25.33	30.00	625
								28.00	675
2.80	84	16	20.42	14.00	*1.81	2.47	22.11	29.00	414
7.02	51	49	22.10	20.00	4.08	3.30	27.68	26.50	298
4.77	63	37	*22.81	23.00	3.63	2.88	26.11	32.00	280
7.27	71	29	23.05	22.00	*3.26	3.30	27.12	27.00	103
								25.00	714
3.46	87	13	21.30	19.00	3.67	3.30	27.63	29.00	279
6.83	48	52	21.10	.....	3.95	.....	26.53	30.00	264
4.90	72	28	15.62	13.74	2.55	2.47	20.31	24.00	250

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	American Agricultural Chem. Co., N. Y.	
405	Orchilla Guano,	G. B. Murphy, Keys,
	Bradley Branch, New York.	
801	†Bradley's Dissolved Bone,	E. H. Adams, Wick,
461		Daniel Hurley, Wysox,
804		E. H. Adams, Wick,
716	Bradley's Soluble Dissolved Bone,	Punxsutawney H'dware Co., Punxsutawney,
	Canton Chemical Branch, Baltimore, Md.	
685	†Canton Chemical Baker's Dissolved Bone Phos.,	H. F. Gump, Everett,
355		T. J. Jacobs, Somerfield,
127		J. H. Wingert, Lewisburg,
693		H. L. Orr, Tyrone,
745		W. S. Weaver, Easton,
336	†Canton Chemical Baker's Dissolved S. C. Bone,	Jas. D. Miller, Rockwood,
763		W. B. Winey, Middleburg,
	Crocker Branch, Buffalo, N. Y.	
419	Crocker's Dissolved Bone Phosphate,	John A. Loose, Berne,
	Cumberland Branch, New York.	
512	Cumberland Dissolved Bone Phosphate,	Warren Fretz, Geigertown,
	Detrick Branch, Baltimore, Md.	
19	†Detrick's Dissolved S. C. Bone,	Passmore & Gillespie, Sylmar,
433		J. S. Fobst, Emaus,
	Great Eastern Branch, Rutland, Vt.	
483	G. E. Dissolved Bone,	Joseph Yorkon, Dushore Sta.,
	Lazaretto Guano Branch, Baltimore, Md.	
688	Lazaretto Dissolved Bone Phosphate, 14 Per Cent.,	J. E. Taylor, Manns Choice,

†Composite sample.

ROCK PHOSPHATES.

Phosphoric Acid.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 24.)	Selling price at the point of selection.	Sample number.
	Soluble in water	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
9.00	0.00	4.26	13.06	**17.32**	.....	**4.26**	.....	$10.46	$16.00	405
8.31	10.29	3.53	1.54	**15.36**	15.00	***13.82**	14.00	13.28	18.00	801
									13.00	461
									23.00	804
8.30	11.79	3.60	2.90	**18.29**	15.00	**15.39**	14.00	14.90	13.00	716
8.44	11.19	4.06	.69	**15.94**	15.00	**15.25**	14.00	13.95	14.00	685
									15.00	355
									12.00	127
									14.00	693
									14.00	745
9.64	11.83	3.74	.60	**16.17**	15.00	**15.57**	14.00	14.17	15.00	336
									14.00	762
7.05	9.81	4.98	.59	**15.38**	15.00	**14.79**	14.00	12.47	13.00	419
7.85	8.85	5.78	3.12	**17.75**	15.00	**14.63**	14.00	14.17	14.00	512
7.59	10.12	4.82	.60	**15.54**	15.00	**14.94**	14.00	13.60	12.00	19
									15.00	433
6.71	12.01	4.60	.55	**17.16**	15.00	**16.61**	14.00	14.80	15.00	483
10.82	11.19	4.10	.65	**15.94**	15.00	**15.29**	14.00	13.96	12.60	688

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample was Taken.
	Milsom Branch, East Buffalo, New York.	
363	†Milsom's Dissolved Bone Phosphate,	King Bros., Uniontown,
150		Peter Haus, New Columbia,
75		D. B. Myers, Gardeners Sta.,
670		H. L. Stultz, Duncansville,
771		Wm. M. Atkinson, McVeytown,
	Moro-Philips Branch, Philadelphia, Pa.	
226	†Moro-Philips Soluble Bone,	John H. Weber, Oak Hall,
593		H. G. Supplee, Bloomsburg,
506	†Moro-Philips Soluble Bone Phosphate, 14 Per Cent.,	N. E. Hunsicker, Mantz,
600		Lemuel Campbell, Sunbury,
765		Ewing & Kinsloe, Newton Hamilton,
	Packers Union Branch, Rutland, Vt.	
342	†Packers Union Acidulated Bone,	J. G. Miller, Kimmel,
86		J. W. Gladfelter, Rossville,
535		J. H. Kirk, East Waterford,
473	Packers Union Wheat, Oats and Clover,	James Avery, Dushore Sta.,
	Sharpless & Carpenter Branch, Phila., Pa.	
175	S. & C's Acid Phosphate,	L. A. Geiger, Joanna,
	Tygert-Allen Branch, Philadelphia, Pa.	
107	Tygert-Allen's Star Dissolved Bone Phosphate,	A. F. Swank, Davidsville,
	Wheeler Branch, Rutland, Vt.	
463	†Wheeler's Electrical Dissolved Bone,	H. W. Choffer, Potterville,
702		John S. Wetsell, Carroltown,
253	†Wheeler's Unammoniated Wheat Grower,	J. A. Wiley, Kelton,
701		John S. Wetsell, Carroltown,
	Williams & Clark Branch, New York.	
143	†Williams & Clark' Acorn Acid Phos., 14 Per Cent.,	F. W. Lindner, Pottsgrove,
205		John Lee, Scranton,

†Composite sample.

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
									$13.00	363
									13.00	159
9.27	8.68	4.26	2.01	**14.95**	13.00	**12.94**	12.00	$12.74	12.00	75
									13.50	670
									12.50	771
11.36	11.16	4.23	.84	**16.23**	15.00	**15.39**	14.00	14.10	13.50	226
									14.00	593
7.55	9.96	5.01	1.17						13.50	506
				16.14	.....	**14.97**	.....	13.80	15.00	600
									13.15	765
									13.50	342
10.50	12.03	3.99	.63	**16.65**	15.00	**16.02**	14.00	14.49	12.50	86
									14.00	535
6.05	9.64	3.99	1.58	**15.21**	13.00	**13.63**	12.00	13.11	.....	473
12.25	10.44	4.40	.22	**15.06**	15.00	**14.84**	14.00	13.44	12.00	175
8.96	12.22	3.07	.83	**16.12**	15.00	**15.29**	14.00	14.13	13.00	107
									14.00	463
9.37	12.03	4.03	.71	**16.77**	15.00	**16.06**	14.00	14.53	14.00	702
									12.00	253
8.84	9.24	4.36	.95	**14.55**	13.00	**13.60**	12.00	12.82	16.00	701
									12.00	143
11.07	10.79	2.83	.66	***14.28**	15.00	***13.62**	14.00	12.93	.....	205

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Zell Branch, Baltimore, Md.	
233	Zell's Dissolved Bone,	W. S. Hastings, Alexandria,
76	†Zell's Dissolved Bone Phosphate,	D. B. Myers, Gardners Sta.,
369		L. C. Fox, N. Stanton,
	Armour Fertilizer Works, Chicago, Ill.	
613	†Cereal Phosphate Fertilizer,	J. A. Romberger, Elizabethville,
566		S. G. Updegraff, Williamsport,
680		J. S. Hershberger, Everett,
612	†Star Phosphate,	J. A. Romberger, Elizabethville,
28		Passmore & Gillespie, Nottingham,
681		J. S. Hershberger, Everett,
	Baugh & Sons Co., Philadelphia, Pa.	
104	†H. G. Acid Phosphate,	P. I. Blough, Hooversville,
91		S. N. Bailey & Bro., Dillsburg,
266		Brinton Walter, Parkesburg,
332		Peter Fink, Somerset,
	A. H. Blaker & Co., Fox Chase, Pa.	
13	Acid Phosphate,	Patterson Ramsey, Kelton,
	Bowker Fertilizer Co., Boston, Mass.	
313	†Dissolved Bone Phosphate,	A. Hostetler, Geistown,
366		Loucks & Morrow, Scottdale,
585		Bailey & Blair, Wellsboro,
829		James McGuire, Knox,
	Henry Cope & Co., Lincoln University, Pa.	
295	Acid Phosphate,	Henry Cope & Co., Oxford,
	Josiah Cope & Co., Lincoln University, Pa.	
291	Acidulated Phosphate,	Josiah Cope & Co., Oxford,
	Eureka Fertilizer Co., Perryville, Md.	
283	†P. P. Super Phosphate,	Lewis H. Kirk & Co., Oxford,
527		Dimm & Kiser, Thompsontown,

†Composite sample

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
4.10	10.08	5.29	1.43	**16.80**	15.00	**15.37**	14.00	$14.16	13.00	233
8.88	11.63	3.32	1.52	**15.87**	15.00	**14.35**	14.00	13.68	13.00	76
									16.50	369
8.15	8.41	3.51	.77	**12.69**	12.00	**11.92**	10.00	11.64	11.50	613
									14.00	566
									13.00	680
10.19	13.14	.98	.24	***14.36**	16.00	**14.12**	14.00	13.34	12.00	612
									12.00	28
									14.00	681
8.17	9.95	6.18	1.43	**17.56**	.....	**16.13**	14.00	14.59	15.00	104
									14.00	91
									12.50	266
									14.00	332
9.82	8.75	4.98	1.07	**14.80**	.....	***13.73**	14.00	12.88	12.00	13
6.60	1.66	8.14	5.33	**15.13**	12.00	***9.80**	11.00	11.22	13.00	313
									17.00	366
									18.00	585
									18.00	829
9.62	10.25	4.11	1.52	**15.88**	15.00	**14.36**	14.00	13.60	11.50	295
9.76	10.67	4.88	.43	**15.98**	.....	**15.55**	14.00	13.98	11.50	291
8.66	6.58	5.23	2.75	***14.56**	16.00	***11.81**	14.00	12.07	12.00	283
									12.50	527

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	W. S. Farmer & Co., Baltimore, Md.	
601	Dissolved S. C. Bone,	Bogar & Bingaman, Herndon,
	Griffith & Boyd, Baltimore, Md.	
300	H. G. Acid Phosphate,	David B. Wertz, Johnstown,
167	†Original Super Phosphate,	Adam Krug, Allenwood,
83		W. A. Storner, Storners Sta.,
659		P. C. Steiner, Bakerstown,
	Hanover Fertilizer Co., Baltimore, Md.	
387	Dissolved S. C. Rock,	H. F. Stambaugh, Abbottstown,
238	Dissolved S. C. Rock,	Isenberg Milling Co., Huntingdon,
	S. M. Hess & Bro., Philadelphia, Pa.	
507	H. G. Acid Phosphate,	John Brown, Mantz,
814	Soluble Bone,	J. N. Williamson, Harrisville,
	Jarecki Chemical Co., Sandusky, O.	
648	Dissolved Bone-Black Wheat Special,	S. J. Saint, Sharpsburg,
	Lackawanna Fert. & Chem. Co., Moosic, Pa.	
197	Acid Phosphate,	R. J. Tanfield, Daleville,
	Nassau Fertilizer Co., New York.	
443	Nassau Soluble Bone Phosphate,	Irwin Platt, Meyersburg,
	Wm. C. Newport Co., Philadelphia, Pa.	
477	†Clear Acid Phosphate,	Willis Mosier, Dushore,
156		John Penny, Dry Valley X Roads,
529		A. H. Ulsh, Millerstown,
	Patapsco Guano Co., Baltimore, Md.	
595	Battle-Axe Phosphate,	W. F. Slagle,
523	Patapsco Dissolved S. C. Bone,	Philip Harley, E. Salem,
392	Patapsco Pure Dissolved S. C. Bone,	J. N. Hersh, New Oxford,
	R. H. Pollock, Baltimore, Md.	
674	†Dissolved S. C. Bone,	A. M. McClure, Everett,
690		J. A. C. Rider, Tyrone,

†Composite sample.

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
8.97	8.90	5.55	1.93	**16.38**	15.00	**14.45**	14.00	$13.65	$14.00	601
11.46	11.10	3.26	1.66	**16.02**	15.00	**14.36**	14.00	13.75	13.00	309
									13.00	167
8.15	7.85	4.90	2.91	**15.66**	13.00	**12.75**	12.00	12.84	12.50	83
									14.00	659
11.83	9.22	4.74	2.07	**16.03**	.....	**13.96**	.....	13.46	13.00	387
13.26	9.29	4.13	1.79	**15.21**	.....	***13.42**	14.00	13.00	14.00	238
7.70	11.32	4.37	1.21	**16.90**	15.00	**15.69**	14.00	14.42	13.50	507
10.06	11.79	3.39	1.89	**17.07**	15.00	**15.18**	14.00	14.41	18.00	814
14.03	10.59	4.68	1.10	**16.37**	16.00	**15.27**	15.00	14.02	20.09	648
10.22	12.38	1.92	.15	***14.45**	15.00	**14.30**	14.00	13.33	15.00	197
9.57	12.27	4.20	1.03	**17.50**	15.00	**16.47**	14.00	14.92	11.15	443
									15.00	477
11.29	10.60	4.71	2.54	**17.85**	15.00	**15.31**	14.00	14.58	13.60	156
									13.00	529
7.96	2.18	9.98	1.89	**14.05**	13.00	**12.16**	12.00	11.44	13.00	595
9.87	11.72	4.04	.49	**16.25**	15.00	**15.76**	14.00	14.24	13.00	523
1.71	11.66	4.51	1.03	**17.20**	15.00	**16.17**	14.00	14.67	14.50	392
11.74	9.39	4.53	1.71	**15.63**	15.00	***13.92**	14.00	13.32	13.00	671
									14.00	690

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Rasin-Monumental Co., Baltimore, Md.	
403	†Acid Phosphate,	G. B. Murphy, Keys,
113		Barron Bros., Rockwood,
704		J. J. Hank, Carroltown,
703	Sea Wall,	J. J. Hank, Carroltown,
117	Sea Wall Special,	Barron Bros., Rockwood,
	Reading Chem. & Fert. Co., Reading, Pa.	
492	Reading Star,	Wm. F. Snyder, Stony Run,
	Scientific Fertilizer Co., Pittsburg, Pa.	
707	Scientific Dissolved Bone,	W. A. Baver, Bradley Jct.,
	Scott Fertilizer Co., Elkton, Md.	
736	Tip Top Soluble Bone,	Daniel R. Stein, Orwigsburg,
	M. L. Shoemaker & Co., Philadelphia, Pa.	
9	Dissolved Bone and Potash,	Chester Co. Ass'n of Farmers, Kelton,
	Chas. A. Sickler & Bro., Wilkes-Barre, Pa.	
214	Monarch Phosphate,	Nelson Graves, Jermyn,
	H. H. Smyser, York, Pa.	
399	Chicago Soluble Bone,	H. H. Smyser, York,
	Southern Fertilizer Co., York, Pa.	
57	†Dissolved Bone Phosphate,	C. J. Bushey,
734		A. F. Kimmel, Orwigsburg,
	J. M. Templin, Honeybrook, Pa.	
260	H. G. Acid Phosphate,	Harrison Ross, Atglen,
	James Thomas, Williamsport, Pa.	
589	†Dissolved Florida Bone Phosphate,	Cotner & Diehl,
559		T. S. Manley, East Canton,
700		J. S. Wetsell, Carroltown,
	York Chemical Works, York, Pa.	
54	Dempwolf's Dissolved Phosphate Fertilizer,	A. J. Wierman, Dillsburg,
	Henry S. Zook, Elverson, Pa.	
258	No. 4 Clear Acid Phosphate,	Amos Smoker, Atglen,

†Composite sample.

PHOSPHATES—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
									$12.50	403
8.46	11.60	3.55	2.55	**17.70**	15.00	**15.15**	14.00	$14.61	14.25	118
									13.50	704
11.70	9.86	3.63	1.85	**15.34**	11.50	**13.49**	10.00	13.16	12.00	703
10.38	10.33	3.31	2.08	**15.67**	11.50	**13.64**	10.00	13.35	13.00	117
5.50	1.42	5.10	4.26	**10.78**	7.00	**6.52**	5.50	8.84	15.00	492
5.62	6.49	4.88	1.88	**13.25**	13.00	***11.37**	12.00	11.49	13.00	707
10.71	11.60	5.98	.79	**18.37**	16.00	**17.58**	14.00	15.42	13.00	736
5.99	1.91	8.44	6.05	**16.43**	.....	**10.38**	.....	11.86	14.30	9
6.27	3.37	7.70	1.58	**12.65**	.....	***11.07**	14.00	10.81	.....	214
8.12	12.06	2.71	3.38	**18.15**	15.00	**14.77**	14.00	14.72	12.50	399
									12.25	57
10.65	10.98	4.73	.64	**16.35**	15.00	**15.71**	14.00	14.18	14.00	734
9.92	9.37	4.52	.99	***14.88**	15.00	***13.89**	14.00	13.03	12.00	260
									14.00	589
11.29	12.18	3.76	.46	**16.40**	15.00	**15.94**	14.00	14.41	.....	659
									14.00	700
8.45	1.85	12.35	2.79	**16.99**	15.00	**14.20**	14.00	12.96	12.50	54
10.80	9.48	4.75	2.86	**17.09**	15.00	**14.23**	14.00	13.93	12.00	258

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	The American Agricultural Chem. Co., N. Y.	
211	Muriate of Potash, ...	David White, Tompkinsville, ...
	Bowker Fertilizer Co., Boston, Mass.	
305	Muriate of Potash, ...	R. L. Watts, Scalp Level, ...
	Hubbard Fertilizer Co., Baltimore, Md.	
778	Muriate of Potash, ...	—— ——, Centre Furnace, ...
	Jacob Reese, Philadelphia, Pa.	
100	*Odorless Slag Phosphate, ...	Henry Stahl, Hooversville, ...
	M. L. Shoemaker, & Co., Philadelphia, Pa.	
8	Nitrate of Soda, ...	Chester Co. Ass'n of Farmers, Kelton, ...

†Composite sample.

FERTILIZERS.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value at Department rating. (See p. 24.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
1.12	.....	.....	.....	.....	.....	.....	.....	49.80	.....	*49.80	50.00	.....	.....	52.80	.....	211
.85	.....	.....	.....	.....	.....	.....	.....	51.62	.....	**51.62**	.....	.....	.....	54.63	$40.00	305
2.19	.....	.....	.....	.....	.....	.....	.....	50.65	.....	**50.65**	.....	.....	.....	53.66	.....	778
.48	0.00	6.18	10.69	***16.87**	19.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	16.00	100
1.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	**15.52**	.....	54.08	44.30	8

*Constituent falls below guaranty.

*The phosphoric acid in basic slag is combined in a manner different from that in either dissolved or raw rock or bone; the slag phosphate is chiefly tetra-calcium phosphate. This is much more available to plants than the results of solution by water and ammonium citrate indicate.

LIST

OF

FERTILIZER MANUFACTURERS

WHO TOOK OUT

Licenses for the Sale of Commercial Fertilizers

IN

PENNSYLVANIA IN 1902,

TOGETHER WITH A LIST OF THE

VARIOUS LICENSED BRANDS OFFERED FOR SALE.

BRANDS OF FERTILIZERS LICENSED FOR SALE IN PENNSYLVANIA FOR THE YEAR 1902.

THE ABBOTT & MARTIN RENDERING CO., No. 232 N. High Street, Columbus, Ohio.

1. "Ideal Grain Grower."
2. "Peerless Bone and Potash."
3. "Harvest King."
4. "Abbott's Tobacco and Potato Special."
5. "New York Special."
6. "Standard Phosphate."
7. "Star Phosphate."
8. "Benders Bone Meal."

ALLEGHENY CITY FERTILIZER WORKS, Allegheny, Pa.

1. "Pure Raw Bone Phosphate."
2. "Pure Raw Bone Meal."
3. "Potato Manure."
4. "Banner Phosphate."
5. "Dissolved Bone and Potash."
6. "Odorless Lawn and Garden Plant Food."
7. "Full Value Phosphate."
8. "Butcher's Bone Meal."
9. "Bone Meal."
10. "Grain and Grass Phosphate."
11. "Special Potash and Phosphate."
12. "Acid Phosphate."

THE ALLENTOWN MANUFACTURING CO., Allentown, Pa.

1. "High Grade Truck and Garden Phosphate."
2. "High Grade Potato Phosphate."
3. "Complete Bone Phosphate."
4. "Special $25.00 Phosphate."
5. "Phosphate and Potash."
6. "Pure Ground Bone."
7. "Acidulated Phosphate."
8. "Economical Phosphate."
9. "Pure Bone and Meal."

AMERICAN REDUCTION CO., No. 1942 Forbes Street, Pittsburg, Pa.

1. "Pittsburg Guano."
2. "Iron City."
3. "Common Sense."
4. "Vegetable Manure."
5. "Fine Ground Bone."

THE AMERICAN AGRICULTURAL CHEMICAL CO., No. 326 Broadway, New York, N. Y.

1. "Pure Ground Bone."
2. "Fine Ground Bone."
3. "Bone Meal."
4. "Muriate of Potash."
5. "Genuine German Kainit."
6. "Dissolved Animal Bone."
7. "Gem Alkaline Bone."

THE A. A. C. CO., BRADLEY'S BRANCH, P. O. Box 217, New York, N. Y.

1. "Bradley's Dissolved Bone and Potash."
2. "Bradley's Bean and Potato Phosphate."
3. "Bradley's Soluble Dissolved Bone."
4. "Bradley's Niagara Phosphate."
5. "Bradley's Alkaline Bone with Potash."
6. "Bradley s B. D. Sea Fowl Guano."

THE A. A. C. CO., CANTON CHEMICAL BRANCH, P. O. Box 407, Baltimore, Md.

1. "Canton-Chemical C. C. C. Special Compound."
2. "Canton-Chemical Baker's Standard H. G. Guano."
3. "Canton-Chemical Baker's Fish Guano."
4. "Canton-Chemical Potato Manure."
5. "Canton-Chemical B. G. Ammoniated Bone."
6. "Canton-Chemical Resurgam Guano."
7. "Canton-Chemical Baker's Special Wheat, Corn and Grass Mixture."
8. "Canton-Chemical Harrow Brand Crop Grower."
9. "Canton-Chemical Eagle Phosphate."
10. "Canton-Chemical Soluble Alkaline Bone."
11. "Canton-Chemical Soluble Bone and Potash."
12. "Canton-Chemical Baker's Dissolved Bone Phosphate."
13. "Canton-Chemical Baker's Dissolved S. C. Bone."

THE A. A. C. CO., CHICOPEE GUANO BRANCH, No. 88 Wall Street, New York, N. Y.

1. "Chicopee Farmer's Reliable."
2. "Chicopee Standard Guano."

THE A. A. C. CO., CLARK'S COVE BRANCH, P. O. Box 1779, New York, N. Y.

1. "Clark's Cove Atlas Bone Phosphate."
2. "Clark's Cove Triumph Bone and Potash."
3. "Clark's Cove Defiance Complete Manure."
4. "Clark's Cove King Philip Alkaline Guano."
5. "Clark's Cove Potato and Hop Grower."

THE A. A. C. CO., CROCKER BRANCH, Buffalo, N. Y.

1. "Crocker's General Crop Grower."
2. "Crocker's Universal Grain Grower."
3. "Crocker's Complete Manure."
4. "Crocker's Complete New Rival Fertilizer."

5. "Crocker's Wheat and Corn Fertilizer."
6. "Crocker's Potato, Hop and Tobacco Fertilizer."
7. "Crocker's Ammoniated Bone Super-Phosphate."
8. "Crocker's Dissolved Bone and Potash."
9. "Crocker's Dissolved Bone Phosphate."

THE A. A. C. CO., CUMBERLAND BRANCH, No. 27 William Street, New York, N. Y.

1. "Cumberland Dissolved Bone Phosphate."
2. "Cumberland Bone and Potash."
3. "Cumberland Hawkeye Fertilizer."

THE A. A. C. CO., DETRICK BRANCH, No. 26 Chamber of Commerce, Baltimore, Md.

1. "Detrick's Quickstep Bone Phosphate for Potatoes and Tobacco."
2. "Detrick's Kangaroo Komplete Kompound."
3. "Detrick's Royal Crop Grower."
4. "Detrick's Standard Potash Fertilizer."
5. "Detrick's Corn and Oats Fertilizer."
6. "Detrick's Imperial Compound."
7. "Detrick's Paragon Ammoniated Bone Phosphate and Potash."
8. "Detrick's P. & B. Special Fertilizer."
9. "Detrick's Bone and Potash (16x4) Mixture."
10. "Detrick's Soluble Bone Phosphate and Potash."
11. "Detrick's Dissolved S. C. Bone."
12. "Orchilla Guano."

THE A. A. C. CO., GREAT EASTERN BRANCH, Rutland, Vt.

1. "Great Eastern Northern Corn Special."
2. "Great Eastern Vegetable, Vine and Tobacco."
3. "Great Eastern Wheat Special."
4. "Great Eastern General."
5. "Great Eastern English Wheat Grower."
6. "Great Eastern Soluble Bone and Potash."
7. "Great Eastern Dissolved Bone."
8. "Great Eastern Unammoniated Wheat Special."
9. "Great Eastern High Grade Cabbage Grower."

THE A. A. C. CO., LAZARETTO GUANO BRANCH, Merchant's Bank Building, Baltimore, Md.

1. "Lazaretto Crop Grower."
2. "Lazaretto Bone Compound."
3. "Lazaretto Special Potato Fertilizer."
4. "Lazaretto Ammoniated Bone Phosphate."
5. "Lazaretto Excelsior A. A. A."
6. "Lazaretto Dissolved Bone and Potash."
7. "Lazaretto Dissolved Bone Phosphate."
8. "Lazaretto H. G. Dissolved Bone and Potash."

THE A. A. C. CO., MARYLAND BRANCH, No. 30 S. Holliday Street, Baltimore, Md.

1. "Maryland Ammoniated Bone."
2. "Maryland O. K. Ammoniated Fertilizer."
3. "Maryland Alkaline Bone."
4. "Maryland Linden Super-Phosphate."
5. "Maryland Bono Super-Phosphate."
6. "Maryland Dissolved S. C. Phosphate."
7. "Maryland Compound for Potatoes and Tobacco."

THE A. A. C. CO., MICHIGAN CARBON WORKS BRANCH, Detroit, Mich.

1. "Red Line Phosphate."
2. "Red Line Phosphate with Potash."
3. "Red Line Complete Manure."
4. "General Crop Fertilizer."
5. "Homestead "A" Bone Black Fertilizer."

THE A. A. C. CO., MILSOM BRANCH, East Buffalo, N. Y.

1. "Milsom's Erie King Fertilizer."
2. "Milsom's Wheat, Oats and Barley Fertilizer."
3. "Milsom's Buffalo Guano."
4. "Milsom's Buffalo Fertilizer."
5. "Milsom's Potato, Hop and Tobacco Fertilizer."
6. "Milsom's Corn Fertilizer."
7. "Milsom's Vegetable Bone Fertilizer."
8. "Milsom's Dissolved Bone and Potash."
9. "Milsom's Acid Phosphate."
10. "Milsom's Dissolved Bone Phosphate."

THE A. A. C. CO., MORO-PHILLIPS BRANCH, No. 708 The Bourse, Philadelphia, Pa.

1. "Moro-Phillips Pure Phuine."
2. "Moro-Phillips Solubie Bone Phosphate."
3. "Moro-Phillips Wheat Special."
4. "Moro-Phillips Farmers' Phosphate."
5. "Moro-Phillips Farmers' Potato Mixture."
6. "Moro-Phillips Alkaline Bone Phosphate."
7. "Moro-Phillips Special Fertilizer."
8. "Moro-Phillips C. & G. Complete Fertilizer."
9. "Moro-Phillips Standard Guano."

THE A. A. C. CO., NIAGARA BRANCH, P. O. Box 189, Buffalo, N. Y.

1. "Niagara Grain and Grass Grower."
2. "Niagara Wheat and Corn Producer."
3. "Niagara Dissolved Bone and Potash."
4. "Niagara Dissolved Bone Phosphate."

THE A. A. C. CO., PACIFIC GUANO BRANCH, P. O. Box 2350, New York, N. Y.

1. "Pacific Dissolved Bone Phosphate."
2. "Pacific Dissolved Bone and Potash."

3. "Pacific A. No. 1 Phosphate."
4. "Pacific Nobsque Guano."
5. "Pacific Potato Phosphate."

THE A. A. C. CO., PACKERS UNION BRANCH, Rutland, Vt.

1. "Packers Union Gardeners' Complete Manure."
2. "Packers Union Animal Corn Fertilizer."
3. "Packers Union Potato Manure."
4. "Packers Union Universal Fertilizer."
5. "Packers Union American Wheat and Rye Grower."
6. "Packers Union Banner Wheat Grower."
7. "Packers Union Acidulated Bone."
8. "Packers Union Wheat, Oats and Clover."

THE A. A. C. CO., QUINNIPIAC BRANCH, No. 27 William Street, New York, N. Y.

1. "Quinnipiac Soluble Dissolved Bone."
2. "Quinnipiac Dissolved Bone and Potash."
3. "Quinnipiac Mohawk Fertilizer."
4. "Quinnipiac Climax Phosphate."

THE A. A. C. CO., READ BRANCH, No. 88 Wall Street, New York, N. Y.

1. "Read's Standard Super-Phosphate."
2. "Read's Leader Blood and Bone."
3. "Read's Farmers' Friend Super-Phosphate."
4. "Read's Acid Phosphate (14 Per Cent.)."
5. "Read's Bone and Potash."

THE A. A. C. CO., REESE BRANCH, Equitable Building, Baltimore, Md.

1. "Reese's Standard."
2. "Reese's Potato Phosphate."
3. "Reese's Mayflower."
4. "Reese's Potato Manure."
5. "Reese's Ammoniated Bone Phosphate Mixture."
6. "Reese's Harvest Queen."
7. "Reese's Pilgrim Fertilizer."
8. "Reese's Challenge Crop Grower."
9. "Reese's Half and Half."
10. "Reese's High Grade Potash Mixture, 12x5."
11. "Reese's Crown Phosphate and Potash."
12. "Reese's Grass and Grain."
13. "Reese's Wheat Special."
14. "Reese's Dissolved Phosphate of Lime."
15. "Reese's Elm Phosphate."

THE A. A. C. CO., SHARPLESS & CARPENTER BRANCH, No. 124 S. Delaware Avenue, Philadelphia, Pa.

1. "Sharpless & Carpenter Corn and Truck Guano."
2. "Sharpless & Carpenter Farmers' Imp. Potato Manure."
3. "Sharpless & Carpenter Gilt Edge Potato and Tobacco Manure."
4. "Sharpless & Carpenter No. 1 Bone Phosphate."

5. "Sharpless & Carpenter Royal Spring Mixture."
6. "Sharpless & Carpenter Soluble Bone and Potash."
7. "Sharpless & Carpenter Farmers' Bone Phosphate."
8. "Sharpless & Carpenter Dis. Bone Phos. for Potatoes and General Use."
9. "Sharpless & Carpenter No. 2 for Grain and Grass."
10. "Sharpless & Carpenter Soluble Tampico Guano."
11. "Sharpless & Carpenter Acid Phosphate."

THE A. A. C. CO., STANDARD BRANCH, No. 40 Exchange Place, New York, N. Y.

1. "Standard Dissolved Bone Phosphate."
2. "Standard Bone and Potash."
3. "Standard "A" Fertilizer."
4. "Standard Guano."

THE A. A. C. CO., SUSQUEHANNA BRANCH, Cor. South and Water Streets, Baltimore, Md.

1. "Susquehanna Potato Phosphate."
2. "Susquehanna Pure Bone Phosphate."
3. "Susquehanna Ammoniated Bone Phosphate."
4. "Susquehanna XXV Phosphate."
5. "Susquehanna Crop Grower."
6. "Susquehanna High Grade Bone and Potash."
7. "Susquehanna Alkaline Bone Phosphate."
8. "Susquehanna Superior Rock Phosphate."
9. "Susquehanna Soluble Bone Phosphate."

THE A. A. C. CO., TYGERT-ALLEN BRANCH, No. 708 The Bourse, Philadelphia, Pa.

1. "Tygert-Allen Star Guano."
2. "Tygert-Allen Star Potato Grower."
3. "Tygert-Allen Star Dissolved Bone Phosphate."
4. "Tygert-Allen Star Soluble Bone and Potash."
5. "Tygert-Allen Star Bone Phosphate."
6. "Tygert-Allen Standard Bone Phosphate."
7. "Howitz's Acid Phosphate."
8. "Allen's Popular Phosphate."
9. "Allen's Special Brand Potato Manure."
10. "Allen's Special for Wheat and Grass."
11. "Allen's Nitro Phosphate."
12. "Allen's Alkaline Bone Phosphate."
13. "Yearsley's Philadelphia Standard Phosphate."

THE A. A. C. CO., M. E. WHEELER & CO. BRANCH, Rutland, Vt.

1. "Wheeler's Corn Fertilizer."
2. "Wheeler's Potato Manure."
3. "Wheeler's Superior Truck."
4. "Wheeler's Royal Wheat Grower."
5. "Wheeler's Wheat and Clover Fertilizer."
6. "Wheeler's Electrical Dissolved Bone."
7. "Wheeler's Unammoniated Wheat Grower."

THE A. A. C. CO., WILLIAMS & CLARK BRANCH, No. 27 William Street, New York, N. Y.

1. "Williams & Clark Acorn Acid Phosphate."
2. "Williams & Clark Dissolved Bone and Potash."
3. "Williams & Clark Prolific Fertilizer."
4. "Williams & Clark Royal Bone Phosphate."
5. "Williams & Clark Americus High Grade Special."
6. "Williams & Clark Americus Universal Ammoniated Dis. Bone."
7. "Williams & Clark Good Grower Potato Phosphate."

THE A. A. C. CO., ZELL GUANO BRANCH, No. 32 South Street, Baltimore, Md.

1. "Zell's Special Compound for Potatoes and Vegetables."
2. "Zell's Ammoniated Bone Super-Phosphate."
3. "Zell's Hustler Phosphate."
4. "Zell's Economizer Phosphate."
5. "Zell's Little Giant."
6. "Zell's Dissolved Bone Phosphate and Potash."
7. "Zell's Electric Phosphate."
8. "Zell's Dissolved Bone Phosphate."

ANSTINE, A., Stewartstown, Pa.

1. "Bone Phosphate."

THE ARMOUR FERTILIZER WORKS, No. 205 LaSalle Street, Chicago, Ill.

1. "Bone Meal."
2. "Raw Bone Meal."
3. "Phosphate and Potash."
4. "Wheat, Corn and Oats Special."
5. "Ammoniated Bone and Potash."
6. "Fruit and Root Crop Special."
7. "All Soluble."
8. "Bone, Blood and Potash."
9. "Armour's Royal Amm. Bone."
10. "High Grade Potash."
11. "Grain Grower."
12. "Star Phosphate."
13. "Cereal Phosphate."
14. "Phosphate and Potash No. 2."
15. "Armour's Wheat Special."
16. "Special Mixture."

AUCKER, R. S., Shamokin, Pa.

1. "Bone Meal."
2. "Bone Meal with Potash."
3. "High Grade Bone and S. H. Phosphate."
4. "Grade A. Bone and Slaughter House Phosphate."
5. "Grade B. Bone and Slaughter House Phosphate."
6. "Grade D. Bone and Slaughter House Phosphate."
7. "Grade E. Bone and Slaughter House Phosphate."
8. "Economy Potash Phosphate."
9. "High Grade Acid Phosphate."

BALTIMORE PULVERIZING COMPANY, Nos. 13 and 15 North Street, Baltimore, Md.

1. "Penniman's Excelsior Fertilizer."
2. "Farmer's Favorite Fertilizer."
3. "Special Spring and Fall Mixture."
4. "Penniman's Special Guano."
5. "Truckers' Choice."

BARTENSCHLAGER, J. H., Stewartstown, Pa.

1. "Bartenschlager's Champion Bone Phosphate."

BAUGH & SONS COMPANY, No. 20 S. Delaware Avenue, Philadelphia, Pa.

1. "Baugh's Bone Meal, Warranted Pure."
2. "Baugh's Pure Dissolved Animal Bone."
3. "Export Bone with Potash."
4. "Baugh's Animal Bone and Potash—Compound for all Crops."
5. "The Twenty-five Dollar Phosphate."
6. "Baugh's Double Eagle Phosphate."
7. "Baugh's General Crop Grower—For all Crops."
8. "Baugh's Soluble Alkaline Super-Phosphate."
9. "Baugh's Wheat Fertilizer—For Wheat and Grass."
10. "Baugh's Potato Fertilizer."
11. "Baugh's Corn Fertilizer—For Sugar Corn and Garden Truck."
12. "The Wrapper Leaf Brand—A Special Manure for Seed Leaf Tobacco."
13. "Baugh's Special Potato Manure."
14. "Baugh's High Grade Acid Phosphate."
15. "Baugh's Ammoniated Soluble Alkaline."

BAUGHMAN, WILLIAM F., Rinely, Pa.

1. "P. & T. Special."
2. "Ammoniated Bone Phosphate."
3. "Harvest Queen Phosphate."

BAXTER, H. V., Chester, Pa.

1. "Pure Ground Bone."
2. "IXL Phosphate."

BERG COMPANY, THE, Port Richmond, Philadelphia, Pa.

1. "Berg's Special Potato Guano."
2. "Berg's Lymph Guano for all Crops."
3. "Berg's $35.00 Potato Manure."
4. "Berg's Standard Bone Manure."
5. "Berg's Pure Dissolved Bone and Potash."
6. "Berg's Pure Raw Bone Fine."
7. "Berg's Special $25.00 Bone Manure."
8. "Berg's Truckers' Jay Guano."

BERGER BROTHERS, Easton, Pa.

1. "Berger Bros. H. G. Acid Phosphate."
2. "Peerless."

BIRELY, A. D. & SONS, Ladiesburg, Md.

1. "Ammoniated Bone Phosphate."
2. "Special Mixture, Wheat and Grass."
3. "Dissolved Ammoniated Bone and Potash."

3. "Wheat and Grass."
4. "Lehigh Super-Phosphate."
5. "Potato and Truck."

BLAKER, A. H., & CO., Fox Chase, Philadelphia, Pa.

1. "Blaker's Acid Phosphate."
2. "Blaker's Special for General Use."
3. "Blaker's Special for Potatoes."
4. "Blaker's Ground Bone."

BLOCHER, D., & CO., Gettysburg, Pa.

1. "Dissolved Raw Bone and Potash."
2. "High Grade Super-Phosphate of Bone."
3. "Ammoniated Soluble Bone Phosphate."
4. "Alkaline Bone."
5. "Dissolved Bone Phosphate."

BONDAY, JAMES, JR., & CO., No. 302 Merchants' Bank Building, Baltimore, Md.

1. "Sulphate of Potash."
2. "Muriate of Potash."
3. "German Kainit—Old Reliable Brand."

BOWKER FERTILIZER COMPANY, THE, No. 43 Chatham Street, Boston, Mass.

1. "Stockbridge Potato and Vegetable Manure."
2. "Bowker's Potash or Staple Phosphate."
3. "Bowker's Sure Crop Phosphate."
4. "Bowker's Ammoniated O. I. O."
5. "Bowker's Super-Phosphate and Potash."
6. "Bowker's Apex Phosphate."
7. "Bowker's Dissolved Bone Phosphate."
8. "Bowker's 6 Per Cent. Potato Fertilizer."
9. "Bowker's Potash Bone."
10. "Bowker's Empire State Bone Phosphate."
11. "Bowker's Hill and Drill Phosphate."
12. "Bowker's Farm and Garden Phosphate."
13. "Bowker's Wheat Grower."
14. "Bowker's Market Garden."
15. "Bone Meal."

BRADLEY & GREEN FERTILIZER CO., Ninth Street and Girard Avenue, Philadelphia, Pa.

1. "Potato Guano No. 1."
2. "Harvest Home."
3. "High Grade Acid Phosphate."
4. "Popular Phosphate—Special for Wheat."
5. "Standard Bone Phosphate—For Corn, Wheat and Peas."
6. "Market Garden."
7. "Seven Per Cent Ammoniated Guano."

BRILLINGER, HORACE, Emigsville, Pa.

1. "Brillinger's Special Wheat, Corn and Grass Mixture."
2. "Standard High Grade Phosphate."

BROWN, J, W., Tilden, York County, Pa.

1. "No. 7. Compound Fertilizer."

BRUBACHER, ELIAS S., Millbach, Pa.

1. "Wheat and Grass Special."

BUCYRUS FERTILIZER CO., THE, Bucyrus, O.

1. "Superior Pure Ground Bone."
2. "Bucyrus Bone Meal."
3. "Bucyrus Guano."
4. "Buckeye Wheat Grower."
5. "Potter's Standard Phosphate."
6. "Natural Plant Food."
7. "Dissolved Bone."
8. "Acid Phosphate."

CAMBRIA FERTILIZER COMPANY, Johnstown, Pa.

1. "Pure Fine Ground Bone Dust."
2. "Lion Ammoniated Bone Phosphate."
3. "Standard Phosphate."
4. "Corn and Potato Manure."
5. "B. & B. Phosphate."

CHICAGO FERTILIZER CO., THE, Security Building, Chicago, Ill.

1. "Mt. Pleasant Phosphate."
2. "No. 1 Acid Phosphate."
3. "Bone, Blood and Potash."
4. "Potash Special."
5. "Corn and Wheat Special."

CINCINNATI PHOSPHATE CO., THE, Cincinnati, O.

1. "Capitol Wheat Grower."
2. "Capitol Grain and Grass Grower."
3. "Capitol Dissolved Bone and Potash."
4. "Capitol Super-Phosphate."
5. "Capitol Tobacco Food."
6. "Capitol Ground Bone."

COE COMPANY, E. FRANK, No. 133 Front Street, New York, N. Y.

1. "High Grade Soluble Bone."
2. "XXV Phosphate. (Ammoniated Bone.)"
3. "Prize Brand Grain Fertilizer."
4. "Special Dissolved—Bone and Potash."
5. "High Grade Acid Phosphate."
6. "Pennsylvania Grain Special."
7. "Columbian Corn Fertilizer."
8. "Columbian Potato Fertilizer."
9. "XXX Acid Phosphate."

COPE, HENRY, & COMPANY, Lincoln University, Pa.

1. "Acid Phosphate."
2. "Soluble Bone and Potash."
3. "Ammoniated Bone Phosphate."
4. "Pure Bone Phosphate."
5. "Potato and Corn Phosphate."
6. "Dead Shot Phosphate."
7. "Pure Ground Bone."
8. "Queen of Elk Valley."
9. "Wheat Grower and Complete Manure."
10. "High Grade Soluble Bone and Potash."
11. "Pure Steamed Bone."

COPE, JOSIAH & COMPANY, Lincoln University, Pa.

1. "Pure Bone Phosphate."
2. "Try Me Bone Phosphate."
3. "Ammoniated Bone Phosphate."
4. "Wheat and Grass Special."
5. "Potato and Tobacco Phosphate."
6. "Acidulated Phosphate."
7. "Soluble Bone and Potash."
8. "Ground Steamed Bone."
9. "Ground Raw Bone."
10. "High-Grade Soluble Bone and Potash."

CRANSTON COMPANY, J. A., Wilmington, Del.

1. "W. B. Raw Bone Super-Phosphate."
2. "Pennsylvania Super-Phosphate."
3. "Horse Shoe Soluble Bone."
3. "Horse-Shoe Soluble Bone."

DARON, E., Dover, Pa.

1. "Daron's Harvest King Bone Phosphate."

DICKEY, J. SCOTT, No. 630 Prince Street, Lancaster, Pa.

1. "Dickey's Pulverized Tobacco Stem Fertilizer."

DOWNWARD & COMPANY, JAMES G., Coatesville, Pa.

1. "Ammoniated Bone Phosphate."
2. "Soluble Bone and Potash."
3. "Wheat and Grass Fertilizer."
4. "Acid Phosphate Rock."
5. "Royal Bone Phosphate."
6. "Special Potato Phosphate."
7. "Special Corn Manure."
8. "Pure Ground Bone."
9. "Pioneer Raw Bone Phosphate."
10. "Special Asparagus Mixture."

DUNGAN, WALLACE, Doylestown, Pa.

1. "Pebel Hill Home Made Animal Bone Mixture."
2. "Bone Flour."

EASTERN CHEMICAL COMPANY, No. 620 Atlantic Avenue, Boston, Mass.

1. "Imperial Liquid Plant Food."

EBY, AMOS, Lehman Place, Pa.

1. "Pequea Bone."
2. "Pequea Economy."
3. "Pequea Ammoniated."
4. "Pequea Bone for Potatoes."
5. "Farmers' Mixture."

EUREKA FERTILIZER COMPANY, Perryville, Md.

1. "Farmers' Favorite Bone Phosphate."
2. "Standard Bone Phosphate."
3. "Grain and Grass Mixture."
4. "Corn and Potato Special."
5. "P. & P. Super-Phosphate."
6. "Potato and Vegetable Fertilizer."
7. "Imperial Bone Phosphate."
8. "Fish, Rock and Potash."
9. "Alkaline Bone and Potash."
10. "Ground Bone."
11. "Eureka Complete Fertilizer."

EWING, WASHINGTON, Landenberg, Pa.

1. "Pure Raw Bone."
2. "Eclipse Raw Bone Phosphate."
3. "Waste Land Potato Phosphate."

FAIRLAMB, R. C., & SONS, Brandywine Summit, Pa.

1. "Potato Special."
2. "Corn Special."
3. "Wheat and Grass Special."

FARMERS' FERTILIZER COMPANY, Westminster, Md.

1. "No. 3 Bone Phosphate."
2. "XX Bone Phosphate."
3. "Carroll Bone Phosphate."
4. "P. A. & P. Phosphate."
5. "Acid Phosphate."

FARMER, W. S., & CO., No. 21 S. Gay Street, Baltimore, Md.

1. "Standard Phosphate."
2. "Harvest Queen Phosphate."
3. "Clyde Brand Phosphate."
4. "B. & P. Phosphate."
5. "Dissolved S. C. Bone."

FOGLEMAN, W. H., Williamsport, Pa.

1. "Pure Bone and Potash."

FRETZ, MAHLON, Sellersville, Pa.

1. "Fretz's Standard Bone Phosphate."

FULTON, JAMES, & SONS CO., Stewartstown, Penna.

1. "Fulton's Corn and Wheat Fertilizer."

GAWTHROP, JOSEPH R., Kennett Square, Pa.

1. "Fine Ground Raw Bone Meal."
2. "Champion Bone Fertilizer for Wheat and Grass."
3. "Complete Ammoniated Bone Phos. for Corn, Oats, Potatoes and Wheat."
4. "Acid Phosphate Rock."

GLICK, I. N., R. F. D. No. 6, Lancaster, Pa.

1. "Up to Date Grain and Grass Grower."

GRIFFITH & BOYD, No. 9 S. Gay Street, Baltimore, Md.

1. "Cereal Bone Plant Food."
2. "Valley Fertilizer."
3. "Peerless Fertilizer."
4. "High Grade Acid Phosphate."
5. "Harvest Queen Phosphate."
6. "XX Potash Manure."
7. "Original Super-Phosphate."
8. "Farmers' Potato Manure."
9. "Ammoniated Bone Phosphate."
10. "Farmers' Improved Phosphate."
11. "Double Strength Tobacco Grower."
12. "Spring Crop Grower."
13. "Pure Fine Ground Bone Meal."
14. "Fish, Bone and Potash."
15. "Special Grain Grower."
16. "Royal Potash Guano."

GROVE, A. M., & CO., Muddy Creek Forks, Pa.

1. "A. M. G. & Co's Standard Bone Phosphate."

HAGER, H. F., Quakertown, Pa.

1. "Hager's Ammoniated Super-Phosphate."
2. "Panic Phosphate."
3. "Farmers' Favorite Phosphate."

HANOVER FERTILIZER COMPANY, N. E. Cor. Gay and Lombard Streets, Baltimore, Md.

1. "Dissolved S. C. Rock."
2. "Royal Bone and Potash."
3. "Farmers' Crop Winner."
4. "Blood and Bone Compound."

5. "Excelsior Combine."
6. "Klondyke Special."
7. "Pure Bone Meal."
8. "High Grade Bone Potash.
9. "Dissolved Raw Bone."

HARDY PACKING COMPANY, THE, No. 189 Madison Street, Chicago, Ill.

1. "Hardy's Crop Producer."
2. "Hardy's Tankage, Bone and Potash."
3. "Hardy's Potash Fertilizer."
4. "Hardy's Phosphate and Potash."

HARTRANFT, FRANK, Coatesville, Pa.

1. "Ground Bone."
2. "Coon Bone Phosphate."
3. "Ammoniated Bone Phosphate."
4. "Potato Phosphate."
5. "Special Phosphate."

HASTINGS, WILLIAM S., & SON., Atglen, Pa.

1. "Clear Acid Phosphate."
2. "Atglen Corn and Potato Guano."
3. "Grain and Grass Special."
4. "Soluble Bone and Potash."

HESS, S. M., & BRO., S. E. Cor. Fourth and Chestnut Streets,, Philadelphia, Pa.

1. "Ammoniated Bone Super-Phosphate."
2. "Keystone Bone Phosphate."
3. "Wheat and Grass Manure."
4. "Emperor Phosphate."
5. "Potato and Truck Manure."
6. "High Grade Acid Phosphate."
7. "Ground Bone."
8. "Special Compound."
9. "Special Corn Manure."
10. "Special Potato Manure."
11. "Soluble Bone."
12. "Soluble Bone and Potash."
13. "Tobacco Manure."
14. "Fish and Potash Manure."
15. "The Scientific Manure."

HOFFMAN, P., & BRO., Raubsville, Pa.

1. "Potato Phosphate."
2. "King Phosphate."

HEWETT FERTILIZER COMPANY, THE, Scranton, Pa.

1. "Pure Ground Bone."

HUBBARD & COMPANY, M. P., & CO., No. 612 Equitable Building, Baltimore, Md.

1. "Hubbard's Bermuda Guano."
2. "Celebrated Dissolved Bone Phosphate for General Use."

3. "Farmers' Acme."
4. "Farmers' Old Economy."
5. "High Grade Soluble Bone and Potash."
6. "Hubbard's Excelsior Bone Phosphate."
7. "Pennsylvania Special Potato Grower."

HUBBARD FERTILIZER COMPANY, THE, No. 708 Merchants' Bank Building, Baltimore, Md.

1. "Hubbard's Standard Bone Super-Phosphate."
2. "Hubbard's Royal Ensign—For Early Market Vegetables."
3. "Hubbard's Farmers' IXL Super-Phosphate."
4. "Hubbard's Wheat Grower's Jewel."
5. "Hubbard's Oriental Phosphate."
6. "Hubbard's Columbia Gem Phosphate."
7. "Hubbard's Soluble Bone and Potash."
8. "Hubbard's High Grade Soluble Tennessee Phosphate."
9. "Hubbard's Trucker's 7 Per Cent. Royal Seal Compound."

INDEX COMPANY, THE, No. 426 N. Third Street, Philadelphia, Pa.

1. "Radix Fertilizer."
2. "Index Bone Phosphate."
3. "Index Ground Bone."
4. "Index Bone Meal."
5. "Index Bone Flour."
6. "Spiro Bone Meal."
7. "Michell's Bone Phosphate."
8. "Michell's Pure Bone Meal."

INTERNATIONAL SEED COMPANY, Rochester, N. Y.

1. "International Grain and Grass Fertilizer."
2. "International Potato and Truck Manure."
3. "International A. L. Special Manure."

JARECKI COMMERCIAL COMPANY, Sandusky, Ohio.

1. "Lake Erie Fish Guano."
2. "Fish and Potash Grain Special."
3. "Number One Fish Guano."
4. "C. O. D. Phosphate."
5. "Pure Ground Bone."
6. "St. Bernard Phosphate."
7. "Dissolved Bone Black Wheat Special."
8. "Fish and Potash Potato and Tobacco Food."
9. "O. K. Fertilizer."
10. "Dissolved Bone with Potash."

JONES, W. C., SONS, Doe Run, Pa.

1. "High Grade Dissolved S. C. Rock."
2. "Dissolved Bone Phosphate."

KENDERDINE, T. S., & SONS, Newtown, Pa.

1. "Kenderdine's Potato Phosphate."
2. "Kenderdine's Bone Phosphate."
3. "Kenderdine's Ammoniated Phosphate."

KUHNS, DAVID, Lehighton, Pa.

1. "Pure Ground Bone Meal."

KURTZ & STUNKARD, Green Bank, Pa.

1. "Conestoga Regulator."
2. "Conestoga Fancy."

LACKAWANNA FERTILIZER & CHEMICAL CO., Moosic, Pa.

1. "Moosic Phosphate."
2. "Special Manure."
3. "Our Admiral Dewey."
4. "Bone Super-Phosphate."
5. "Alkaline Bone."
6. "Warranted Pure Ground Bone."
7. "Acid Phosphate."
8. "Big Yield."
9. "Wyoming Guano."
10. "Kali Chief."

LANCASTER CHEMICAL COMPANY, Lancaster, Pa.

1. "Tobacco and Vegetable."
2. "Dewey Brand."
3. "Pure Dissolved Animal Bone and Potash."
4. "Rising Sun Animal Bone."
5. "Pure Dissolved Animal Bone."
6. "Flag Brand."
7. "Hard Times Fertilizer."
8. "Economist."
9. "Acid Phosphate."
10. "Keystone Brand."
11. "Alkaline Bone."
12. "Bone Meal."
13. "Special Potato Manure."

LEBERNIGHT, B. F., Red Lion, Pa.

1. "Lebernight's Standard Ammoniated Bone Phosphate."

LEIB, J. C., & Co., Stewartstown, Pa.

1. "Gemmills Mixture."

LETHERBURY, D. A., Chester, Pa.

1. "Chester Brand Bone Phosphate."

LEVAN, DANIEL, Lebanon, Pa.

1. "Wheat and Grass Special."
2. "Keystone Bone Fertilizer."
3. "Bone and Potash Compound."

LISTER'S AGRICULTURAL CHEMICAL WORKS, Newark, N. J.

1. "Lister's Animal Bone and Potash."
2. "Lister's Animal Bone and Potash No. 2."
3. "Lister's Corn and Potato Fertilizer."
4. "Lister's Success Fertilizer."
5. "Lister's Standard Pure Bone Super-Phosphate."
6. "Lister's Potato Fertilizer No. 2."
7. "Lister's Special Wheat Fertilizer."
8. "Lister's Special 10 Per Cent. Potato Fertilizer."
9. "Lister's "G" Brand."
10. "Lister's Special Crop Producer."
11. "Lister's Ammoniated Dissolved Bone Phosphate."
12. "Lister's Harvest Queen Phosphate."
13. "Lister's Potato Manure."
14. "Lister's U. S. Super-Phosphate."
15. "Lister's Alkaline Bone."
16. "Lister's 3—6—10 for Potatoes."
17. "Lister's Celebrated Ground Bone Acidulated."

McCALMONT & CO., Bellefonte, Pa.

1. "McCalmont & Co's. $25.00 Ammoniated Bone Super-Phosphate."

MAPES FORMULA AND PERUVIAN GUANO CO., No. 143 Liberty Street, New York, N. Y.

1. "Mapes Potato Manure."
2. "Mapes Tobacco Starter Improved."
3. "Mapes Tobacco Manure (Wrapper Brand)."
4. "Mapes Fruit and Vine Manure."
5. "Mapes Vegetable Manure or Complete Manure for Light Soils."
6. "Mapes Average Soil Compound Manure."
7. "Mapes Economical Potato Manure."
8. "Mapes Cauliflower and Cabbage."
9. "Mapes Corn Manure."
10. "Mapes Complete Manure, "A" Brand."
11. "Mapes Complete Manure for General Use."
12. "Mapes Ammoniated Dissolved Bone with Potash."
13. "Mapes Cereal Brand."
14. "Mapes Grain Brand."
15. "Mapes General Crop Brand."
16. "Mapes Top Dresser Improved—Half Strength."

MARKEL, NOAH, Seitzland, Pa.

1. "Markel's Ammoniated Bone Phosphate."
2. "Markel's Potato Grower."
3. "Markel's Electric Phosphate."

MARTIN CO., THE D. B., 1204 Land Title Building, Philadelphia, Pa.

1. "Special Dissolved Bone and Potash Compound."
2. "Claremont Dissolved Bone and Potash."

MEHRING, FREDERICK, Bruceville, Pa.

1. "Dissolved Raw Bone."
2. "Twenty-six Dollar Phosphate."
3. "General Crop Grower."
4. "Acid Phosphate.'

MILLER FERTILIZER COMPANY, No. 411 E. Pratt Street, Baltimore, Md.

1. "Ammoniated Dissolved Bone."
2. "Harvest Queen."
3. "Special Potato."
4. "Hustler Phosphate."
5. "W. G. Phosphate."
6. "Standard Phosphate."
7. "Clinch Phosphate."

MORRIS, NELSON & CO., Union Stock Yards, Chicago, Ill.

1. "Big Two. Pure Bone Meal."
2. "Big Three. Bone Phosphate."
3. "Big Four. Bone Phosphate."
4. "Big Five. Bone Phosphate."

MOWREY LATSHAW HARDWARE CO., THE, Spring City, Pa.

1. "Red Clover Brand."

NASSAU FERTILIZER CO., No. 5 Beaver Street, New York, N. Y.

1. "Soluble Bone and Potash."
2. "Grass and Grain Fertilizer."
3. "Potash and Phosphate."
4. "Wheat and Grass Grower."
5. "General Favorite."
6. "Nassau Practical."
7. "Common Sense Fertilizer."
8. "The Harvester."
9. "Plow Brand."

NELLER, AUG., & CO., Stewartstown, Pa.

1. "Prolific Phosphate."
2. "Special Compound Phosphate."

NEW JERSEY AGRICULTURAL CHEMICAL CO., Newark, N. J.

1. "Potato Manure."
2. "Champion."
3. "Russell's Ground Bone."
4. "Russell's Ammoniated Dissolved Bone Phosphate."
5. "Russell's Special Corn Manure."
6. "Harvest Queen."

NEWPORT, WILLIAM C., CO., Willow Grove, Pa.

1. "Evan's Brand Potato and Tobacco Manure."
2. "Rectified Phosphate."
3. "Gilt Edge Potato Manure."
4. "Fish, Bone and Potash."
5. "Farmers' Ammoniated Bone Phosphate."
6. "Grain and Grass Special."
7. "Soluble Bone and Potash."
8. "Acid Phosphate."
9. "Bone Meal."
10. "Newport's Special Compound for Wheat and Grass."
11. "No. 1 Bone Phosphate."
12. "Truckers' Joy."
13. "Potato, Tobacco and Truck Guano."

OBER, G., & SONS, No. 33 S. Gay Street, Baltimore, Md.

1. "Ober's Special Plant Food."
2. "Ober's Farmers' Mixture."
3. "Ober's Dissolved Bone Phosphate and Potash."
4. "Ober's Dissolved Bone Phosphate."
5. "Ober's Independent Ammoniated Super-Phosphate."

OHIO FARMERS' FERTILIZER CO., Columbus, O.

1. "Acid Phosphate."
2. "Superior Phosphate."
3. "Soluble Bone and Potash."
4. "General Crop and Fish Guano."
5. "Corn, Oats and Wheat Fish Guano."
6. "Wheat Maker and Seeding Down."

OSCEOLA FERTILIZER COMPANY, Osceola Mills, Pa.

1. "Pie Brand Ground Bone."
2. "Ideal Manure."

OWENS, W. C., Philipsburg, Pa.

1. "Owens' Ammoniated Phosphate."

PATAPSCO GUANO COMPANY, P. O. Box 213, Baltimore, Md.

1. "Patapsco Pure Ground Bone."
2. "Patapsco Soluble Bone and Potash."
3. "Patapsco Fish Guano."
4. "Patapsco Special Wheat Compound."
5. "Sea Gull Guano."
6. "Coon Brand Guano."
7. "Baltimore Soluble Phosphate."
8. "Patapsco Dissolved S. C. Bone."
9. "Grange Mixture."
10. "Patapsco Grain and Grass Producer."
11. "Patapsco Early Trucker."

12. "Patapsco Tobacco and Potato Fertilizer."
13. "Patapsco Corn and Tomato Fertilizer."
14. "Patapsco High Grade Bone and Potash."
15. "Battle Ax Phosphate."

PATTERSON FERTILIZER CO., No. 4025 Market Street, Philadelphia, Pa.

1. "Patterson's Mineral Compound."

PENNSYLVANIA AMMONIA AND FERTILIZER CO., LIM., Harrisburg, Pa.

1. "Potato, Vegetable and Tobacco."
2. "Dauphin Brand."
3. "Pure Ground Bone."
4. "Capital Bone Super-Phosphate."
5. "Royal Mixture."
6. "Soluble Bone and Potash."

PERKINS, A. W., & CO., Rutland, Vt.

1. "Plantene."

PERKINS, J. DOUGLASS, Coatesville, Pa.

1. "Perkins' Monarch Phosphate."
2. "Perkins' Ammoniated Bone Phosphate."
3. "Perkins' Special Bone Manure.".
4. "Perkins' Globe Phosphate."
5. "Perkins' Pure Bone Meal."
6. "Perkins' Acidulated Phosphate."

PIEDMONT-MT. AIRY GUANO CO., THE, No. 109 Commerce Street, Baltimore, Md.

1. "Levering's Standard."
2. "Piedmont High Grade S. C. Bone."
3. "Piedmont Royal Ammoniated Bone and Potash."
4. "Piedmont Soluble Bone and Potash."
5. "Piedmont Pure Raw Bone Mixture."
6. "Levering's Harvest Queen."
7. "Levering's IXL Phosphate."
8. "Diamond (S) Soluble Bone."
9. "Piedmont Pennsylvania Potato Producer."
10. "Piedmont Special Potato Goods."
11. "Levering's Ammoniated Bone."

PITTSBURG PROVISION CO., Pittsburg, Pa.

1. "No. 1 Pure Raw Bone Meal."
2. "Pure Raw Bone Meal."
3. "Crescent Butchers' Ground Bone."
4. "Pure Bone with Potash."
5. "Corn and Potato Fertilizer."
6. "Keystone Fertilizer."

7. "Guano Fertilizer."
8. "Acid Phosphate."
9. "Phosphate and Potash."

POLLOCK, R. H., No. 51 S. Gay Street, Baltimore, Md.

1. "Dissolved S. C. Bone."
2. "Victor Bone Phosphate."
3. "Superior Corn and Tomato Fertilizer."
4. "Owl Brand Guano."
5. "Special Potato and Tobacco Fertilizer."
6. "Special Wheat Grower."
7. "Ammoniated Bone Phosphate."
8. "Soft Ground Bone."
9. "Dissolved Animal Bone."

PUGH & LYON, Oxford, Pa.

1. "Ground Raw Bone."
2. "Bone Phosphate."

RAMSBURG FERTILIZER COMPANY, Frederick, Md.

1. "Excelsior Plant Food."
2. "Old Virginia Compound."
3. "Ammoniated Bone Phosphate."
4. "Alkaline Phosphate."
5. "Dissolved Bone Super-Phosphate."
6. "Ramsburg's Queen."

RASIN-MONUMENTAL COMPANY, No. 300 Water Street, Baltimore, Md.

1. "Rasin's Empire Guano."
2. "Rasin's Ammoniated Super-Phosphate."
3. "Rasin's Bone and Potash Fertilizer."
4. "Rasin's Acid Phosphate."
5. "Rasin's IXL Fertilizer."
6. "Special Formula for Corn and Buckwheat."
7. "Seawall Special."
8. "Rasin's Ammoniated Alkaline Phosphate."

RAUH, E., & SONS., No. 419 S. Penn Street, Indianapolis, Ind.

1. "Dissolved Bone and Potash."
2. "Soluble Bone."
3. "Ideal Phosphate."
4. "Fish Guano."
5. "Our Special."

READING CHEMICAL AND FERTILIZING CO., LIM., Reading, Pa.

1. "Potato and Vegetable Brand."
2. "Neversink Brand."
3. "A. A. Brand."
4. "Mt. Penn Brand."
5. "Reading Star Brand."

REESE, JACOB, No. 400 Chestnut Street, Philadelphia, Pa.

1. "Odorless Slag Phosphate."

REICHARD, J. G. & BRO., Allentown, Pa.

1. "The Lehigh Potato Manure."
2. "Surface Phosphate."
3. "Little Giant Phosphate."

RICE, HAMPTON, Lumberville, Pa.

1. "W. Kenderdine's A. A. Phosphate."
2. "W. Kenderdine's A. B. Phosphate."

RIVERSIDE ACID PHOSPHATE, Warren, Pa.

1. "Harvest Moon Phosphate."
2. "Rich-acre Phosphate."
3. "Old Gold Phosphate."
4. "Phosphate and Potash."

SALE, GEORGE F. (Sandiford), Philadelphia, Pa.

1. "Geo. F. Sale's Special Manure for all Crops."

SCHAAL-SHELDON FERTILIZER CO., Erie, Pa.

1. "Sheldon's Empire."
2. "Sheldon's Farmers' Favorite."
3. "Schaal's Standard."
4. "Sheldon's Grass, Grain and Potato."
5. "Schaal's Corn and Potato."
6. "Sheldon's Guano."
7. "Pure Bone Meal."
8. "Dissolved Bone and Extra Potash."
9. "Dissolved Bone and Potash."
10. "Dissolved Bone."

SCHMUCHER, A. B., Hazleton, Pa.

1. "Hazel Brand."

SCIENTIFIC FERTILIZER CO., THE, Pittsburg, Pa.

1. "Scientific Corn and Grain Fertilizer."
2. "Scientific Economy."
3. "Scientific Bone, Meat and Potash Fertilizer."
4. "Scientific Potato Fertilizer."
5. "Scientific Dissolved Bone Fertilizer."
6. "Scientific Phosphate and Potash Fertilizer."
7. "Bone and Meat."
8. "Pure Raw Bone Meal."
9. "High Grade Acid Phosphate."
10. "Scientific Wheat and Clover Fertilizer."
11. "Scientific Grain Grower."
12. "Scientific Bone and Potash Fertilizer."
13. "Patrons' Special."

SCOTT FERTILIZER CO., THE, Elkton, Pa.

1. "Sure Growth Super-Phosphate."
2. "Standard Phosphate."
3. "Elk Head Super-Phosphate."
4. "Corn and Oats Grower."
5. "Tip Top Soluble Bone."
6. "Scott's Potato Grower."
7. "Potato, Truck and Tobacco Grower."
8. "Wheat and Grass Grower."
9. "Tip Top and Potash."
10. "Sure Growth Compound."

SHENANDOAH FERTILIZER COMPANY, Shenandoah, Pa.

1. "Standard Potash Brand."
2. "Ringtown Clover."
3. "Gold Eagle."
4. "N. & S. Complete Clover."
5. "Special Wheat."
6. "Pure Ground Bone."

SHOEMAKER, M. L., & CO., Cor. Delaware Avenue and Venango Streets, Philadelphia, Pa."

1. "Swift Sure Phosphate for General Use."
2. "Swift Sure Phosphate for Potatoes."
3. "Swift Sure Phosphate for Tobacco."
4. "Swift Sure Special 10 Per Cent. Potato Fertilizer No. 1."
5. "Swift Sure Special 10 Per Cent. Potato Fertilizer No. 2."
6. "Swift Sure Guano for Tomatoes, Truck and Corn."
7. "Swift Sure Guano for Fall Trade."
8. "Swift Sure New Jersey Special for Oats."
9. "Swift Sure New Jersey Special for Wheat and Clover."
10. "Swift Sure Bone Meal."
11. "Swift Sure Dissolved Bone."
12. "Good Enough Phosphate."
13. "Echo Phosphate."
14. "Twenty-three Dollar Phosphate."
15. "Dissolved S. C. Rock."
16. "Pure Raw Bone Meal."
17. "Dissolved Bone and Potash."

SICKLER, CHAS. A., & BRO., Wilkes-Barre, Pa.

1. "Special Manure for Potatoes and Vegetables."
2. "Vegetable and Vine Fertilizer."
3. "Empire Phosphate."
4. "King Phosphate."
5. "Monarch Phosphate."
6. "Pure Ground Bone."
7. "Graves Potato and Tobacco Manure."
8. "Peerless Phosphate."
9. "Empire Corn Fertilizer."

SIMON, A. A., Maud P. O., Pa.

1. "Truck and Corn."
2. "Potato Grade."
3. "General Use."

SLAGLE, E. A., Paxinos, Pa.

1. "Xtra Bone Phosphate."

SMYSER, H. H., York, Pa.

1. "Chicago Soluble Bone."
2. "Chicago Crop Grower."
3. "Chicago Bone and Tankage."
4. "Chicago Bone and Potash."

SOUTHERN FERTILIZER COMPANY, York, Pa.

1. "Ox Brand Ammoniated Dissolved Bone."
2. "Ox Brand Special Potato Grower."
3. "Ox Brand General Crop Grower."
4. "Ox Brand Farmers' Choice Brand."
5. "Ox Brand Dissolved Bone Phosphate."
6. "Ox Brand Soluble Bone and Potash."
7. "Ox Brand Queen of the Harvest."
8. "Ox Brand Pure Ground Bone."
9. "Bone and Potash Mixture."

STERNER, E. H., Codorus, Pa.

1. "Sterner's Dissolved Bone Phosphate."

STRAINING, JOHN E., No. 1752 N. Cameron Street, Harrisburg, Pa.

1. "Bone and Meat Fertilizer."

SWIFT & COMPANY, Union Stock Yards, Chicago, Ill.

1. "Swift's Super-Phosphate."
2. "Swift's Complete Fertilizer."
3. "Swift's Ammoniated Bone."
4. "Swift's Pure Raw Bone Meal."
5. "Swift's Bone Meal."
6. "Swift's Diamond (S) Phophate."
7. "Swift's Onion and Potato Special."
8. "Swift's Special Bone Meal."
9. "Swift's Champion Wheat Grower."
10. "Swift's Champion Corn Grower."
11. "Swift's Phosphate and Potash."
12. "Swift's Pure Acid Phosphate."
13. "Swift's Vegetable Grower."
14. "Swift's Sugar Beet Grower."
15. "Swift's Special Phosphate and Potash."

TAYLOR PROVISION COMPANY, THE, Trenton, N. J.

1. "Special Potato."
2. "Corn and Truck."
3. "Ammoniated Dissolved Bone."

TEMPIN, J. M., Honeybrook, Pa.

1. "No. 3. Farmers' Complete Fertilizer."
2. "No. 4. Atlas Brand."
3. "No. 5. High Grade Acid Phosphate."
4. "No. 8. High Grade Potash Manure."
5. "No. 16. Cereal Fertilizer."

THOMAS, D. A., Hagerstown, Md.

1. "Thomas' Bone Mixture."
2. "Thomas' Mixture."
3. "Dissolved Bone Phosphate."

THOMAS, HAINES & CO., Malvern, Pa.

1. "New Century Crop Grower."

THOMAS, JAMES, Williamsport, Pa.

1. "Thomas' High Grade Bone Super-Phosphate."
2. "Thomas' Klondyke Brand."
3. "Thomas' High Grade Potato and Tobacco Manure."
4. "Thomas' Special Compound for Wheat, Oats, Corn and Grass."
5. "Thomas' Standard Bone Phosphate."
6. "Thomas' Florida Bone Phosphate."
7. "Thomas' Dissolved Florida Bone and Potash Phosphate."

THOMAS, I. P., & SONS COMPANY, No. 2 S. Delaware Avenue, Philadelphia, Pa.

1. "S. C. Phosphate."
2. "Farmers' Choice Bone Phosphate."
3. "Normal Bone Phosphate."
4. "Improved Super-Phosphate."
5. "Special Corn Fertilizer."
6. "Alkaline Bone."
7. "Special Alkaline Bone."
8. "Dissolved Phosphate."
9. "Tip Top Raw Bone Super-Phosphate."
10. "Pure Ground Animal Bone."
11. "Potato Fertilizer."
12. "Champion Bone Phosphate."
13. "Superior Super-Phosphate."
14. "Special Truckers' Fertilizer."

TOMLINSON, WATSON, JR., Torresdale, Philadelphia, Pa.

1. "Tomlinson's Potato Fertilizer and Crop Feeder."
2. "Tomlinson's Ammoniated Potato Fertilizer."
3. "Tomlinson's All Crop Fertilizer."
4. "Tomlinson's Market Garden Guano."
5. "Tomlinson's Grain and Grass Fertilizer."

TRENTON BONE FERTILIZER CO., Trenton, N. J.

1. "Trenton Super-Phosphate."
2. "Trenton Corn Mixture."
3. "Trenton $32.00 Potato Manure."
4. "Trenton Potato Manure."
5. "Trenton Excelsior."
6. "Trenton Corn and Truck Fertilizer."
7. "Pure Fine Ground Bone."
8. "Trenton XX Brand Fertilizer."
9. "Trenton Special Potato Manure."

TRINLEY, JACOB, Linfield, Pa.

1. "Pure Raw Bone Meal."
2. "Pure Raw Bone Super-Phosphate."
3. "Grain and Grass Grower."
4. "Ravere Bone Phosphate."
5. "Soluble Bone and Potash."

TUSCARORA FERTILIZER COMPANY, THE, Port Royal, Pa.

1. "Ammoniated Phosphate."

TUSTIN, I. J., Phoenixville, Pa.

1. "Pickering Valley Special for Potatoes."
2. "Pickering Valley Special."
3. "Pickering Valley High Grade."

TYGERT, THE, J. E., COMPANY, No. 42 S. Delaware Avenue, Philadelphia, Pa.

1. "Bone Phosphate."
2. "Ground Bone."
3. "Soluble Bone and Potash."
4. "Potato Guano."
5. "Ammoniated Super-Phosphate."
6. "Popular Phosphate."
7. "Golden Harvest Phosphate."
8. "Acid Phosphate."

ULMER, JACOB, PACKING COMPANY, Pottsville, Pa.

1. "Ulmer's Blood, Meat and Bone Super-Phosphate."

UNIONTOWN FERTILIZER WORKS, Uniontown, Pa.

1. "Fell's Pure Ground Bone."
2. "Fell's Gold Premium Bone Phosphate."
3. "Fell's High Grade Acid Phosphate."

WAHL, EMIL, MANF'G. CO., Nos. 3970-3986 Pulaski Avenue (Nicetown), Philadelphia, Pa.

1. "Emil Wahl's Warranted Pure Philadelphia Button Bone Dust."

WALKER, STRATMAN & COMPANY, Herr's Island, Allegheny, Pa.

1. "Four Fold."
2. "Grain King."
3. "Big Bonanza."
4. "Potato Special."
5. "Meat, Blood and Bone with Potash."
6. "Help Mate."
7. "Phosphoric Acid and Potash."
8. "Bone and Meat."
9. "Pure Raw Bone Meal."
10. "Acid Phosphate."
11. "Grain Manure."
12. "Potash and Bone Phosphate."

WALKER, J. C., & SON, Gap, Pa.

1. "Pride of Pequea."
2. "Pride of Pequea, High Grade."

WALT, F. K., & CO., Supplee P. O., Pa.

1. "Flesh and Bone Phosphate."
2. "Calcine Bone Phosphate."
3. "Sure Growth Phosphate."

WHANN, W. E., William Penn P. O., Pa.

1. "Special Potato and Truck Fertilizer."
2. "Raw Bone Super-Phosphate."
3. "Fish and Potash Fertilizer."
4. "Ammoniated Phosphate."
5. "No. 2 Ammoniated Phosphate."
6. "Special Ammoniated Phosphate."
7. "Soluble Bone and Potash."
8. "Available Ammoniated Phosphate."
9. "South Carolina Phosphate."
10. "Pure Ground Raw Bone."
11. "Sweet Potato and Celery Mixture."

WHANN, JOHN, & SON, No. 28 S. Delaware Avenue, Philadelphia, Pa.

1. "Our Brand Raw Bone Phosphate."
2. "A. A. Acid Phosphate."
3. "J. W. & S. Special Mixture."
4. "Wheat and Grass Mixture."
5. "Reliable Ammoniated Super-Phosphate."
6. "Whann's Soluble Bone and Potash."

WINDLE, DOAN & CO., Coatesville, Pa.

1. "Ground Bone."
2. "Cook's Bone Phosphate."
3. "Ammoniated Bone Phosphate."
4. "Potato Phosphate."

WOOLDRIDGE, THE R. A., COMPANY, No. 33 S. Gay Street, Baltimore, Md.

1. "Florida Acid Phosphate."
2. "German Potash Mixture."
3. "Liberty Bell Potash Mixture."
4. "Champion Giant Phosphate."
5. "Chieftain Bone Stock Phosphate."
6. "Triumph Pure Bone Phosphate."
7. "Special Potato Fertilizer."
8. "Tuckahoe Bone Meal."
9. "Buffalo Bone Stock Phosphate."
10. "Pure Raw Bone."
11. "Sweepstakes, Sure Shot, Truck Phosphate."

YORK CHEMICAL WORKS, York, Pa.

1. "Plow Brand."
2. "Standard Potash."
3. "Prosperity."
4. "Harvest Queen."
5. "New York."
6. "Half and Half."
7. "Red Cross."
8. "Black Cross."
9. "Wheat Special."
10. "Dissolved Phosphate."
11. "Dempwolf's Standard Fertilizer."
12. "Dempwolf's Corn and Oats Special."
13. "Special Tobacco."
14. "Potato and Truck Special."

ZEIGLER, E. H., & CO., Stewartstown, Pa.

1. "Bone Phosphate."
2. "Zeigler's Potato Phosphate."
3. "Zeigler's Mixture."
4. "Zeigler's Crop Grower."

ZOOK, HENRY S., Elverson, Pa.

1. "No. 5. Pride of Chester Corn, Oats and Wheat Fertilizer."
2. "No. 6. Pride of Chester Dissolved Animal Bone Phosphate."
3. "No. 7. Pride of Chester Dissolved Animal Bone Phosphate for General Use."
4. "Zook's Clear Acid Phosphate."

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF AGRICULTURE.

BULLETIN NO. 101.

TABULATED ANALYSES

OF

COMMERCIAL FERTILIZERS

FROM

SAMPLES SELECTED IN ACCORDANCE WITH ACT OF MARCH 25, 1901,

BY THE

Pennsylvania Department of Agriculture,

FROM JANUARY 1st, 1902, TO AUGUST 1st, 1902.

WM. STANLEY RAY,
STATE PRINTER OF PENNSYLVANIA.
1902.

SPECIAL NOTICE.

The attention of manufacturers and agents is hereby called to the fact that all licenses for the manufacture and sale of Commercial Fertilizers expired December 31st, 1901, and in order to protect agents and others selling, or offering these goods for sale, all licenses should be promptly renewed. It is the duty of agents to know that the fertilizers which they sell or offer for sale are properly licensed, for they, with the manufacturers, are personally liable for offering or selling unlicensed goods.